Name_____ No. ___ _ School _ _ _ _ _ _ _ _ _ _

2010 State Farm Business Management, Part 1

Select the best response for each question and mark that answer on the answer sheet with a pen or pencil. Black out the correct "bubble,"© © © ®.

1. Why do farmers generally have no control over prices of their products?

   A. * there are many sellers competing in the market
   B. futures market speculators set prices
   C. middlemen set prices
   D. the Federal Price Stabilization Board sets prices

2. The process of discounting involves:

   A. figuring future returns conservatively so as not to overestimate future profits.
   B. making an offer below the price you would otherwise be willing to pay in the hope the lower price will be accepted.
   C. * figuring the present value of income or costs that will occur in the future.
   D. figuring the future value of income or costs.

3. The adjusted basis of an asset for tax purposes is defined as:

   A. the cost.
   B. the cash boot paid regardless of the trade-in.
   C. * the cost, plus major improvements, less depreciation.
   D. value left after deducting expenses.

4. By diversifying crop enterprises rather than specializing in one major crop, the farmer may:

   A. * reduce risk and uncertainty.
   B. decrease annual labor efficiency.
   C. facilitate the use of more labor saving equipment.
   D. increase risk and uncertainty.

5. On March 1, 2009, a lawn and garden center owner borrowed $25,000 to buy bedding and nursery plants. On December 1, 2009, the owner repaid the $25,000 loan along with $1,828.13 interest. What is the annual rate of interest on the loan?

   A.* 9.75%
   B. 11.25%
   C. 11.75%
   D. 12.25%

6. The increase in corn yield decreases for each additional pound of nitrogen after 50 pounds applied per acre. This is an example of:

   A. decreasing total production.
   B. increasing marginal product.
   C. * diminishing marginal product.
   D. the risk of using too much fertilizer.

7. Which of the following criteria for ranking investments considers the time value of money?

   A. simple rate of return method
   B. payback method
   C. the extrapolation method
   D. * net present value method

8. An investor uses a 10 percent discount rate in analyzing investments. A $10,000 return to be received in two years has a present value of:

   A.* $8,264
   B. $9,091
   C. $11,000
   D. $12,100

9. The difference between the price of a futures contract and the local cash price is:

   A.• basis.
   B. bid price.
   C. margin.
   D. mark-up.

10. The value of a resource in its next best use is called:

    A. variable cost.
    B. foregone interest.
    C. • opportunity cost.
    D. value of the marginal product.

11. Which of the following should be used to determine the amount of net return earned by the farm?

    A. cash flow
    B. * income statement
    C. partial budget
    D. enterprise budget

12. Which of the following is a fixed cost?

A. interest on operating capital
B. • depreciation on buildings and equipment
C. seed and fertilizer
D. fuel and lubrication

13. During the last 12 months, a farm had cash receipts of $15,000 from the sale of crops, and cash outlays of $ 14,000. The farm had a:

A. net farm income of $1,000.
B. * positive cash flow of $1,000.
C. net worth increase of $1,000.
D. depreciation change of $1 ,000.

14. The financial condition of a business at a point in time is best shown on a(n):

A. • net worth statement.
B. income statement.
C. cash flow statement.
D. depreciation record.

15. Renting farm land on shares of production rather than cash results in:

A. less risk for both the landlord and tenant.
B. more risk for both the landlord and tenant.
C. less risk for the landlord, more risk for the tenant.
D. * more risk for the landlord, less risk for the tenant.

16. If a farmer borrows $20,000 for *5* months at 9% interest, how much interest is due at the end of *5* months?

A.* $750
B. $900
C. $1,160
D. $1,800

17. A farmer has 80 acres of wheat which produced 2455 bu. and the price of wheat is $3.95 per bushel. The farmer's operating costs of production were $37.45 per acre and fixed costs were $19.25 per acre. What is breakeven yield? :

A. 5.05 bu per acre
B. 9.48 bu per acre
C. * 14.35 bu per acre
D. 30.69 bu per acre

18. The durum wheat yield has averaged 33 bushels per acre and the sunflower yield has averaged 1480 pounds per acre. Production costs for durum wheat are $98.00 per acre and sunflower are $119.00 per acre. If the price for durum wheat is $5.75 per bushel, what price would you need to receive for sunflowers to equal the net returns received for durum?

A. $6.62 per cwt
B. $8.04 per cwt
C. $12.60 per cwt
D. • $14.24 per cwt

19. How much anhydrous ammonia (NH3) should be applied to maximize profits, if wheat is $3.25 per bushel; NH3 is $325 per ton and the wheat responds to each additional lO pounds of NH3 by the following yield increases?

NH3 INCREASE	WHEAT YIELD INCREASE
first 10 pounds	3.00
second lO pounds	2.50
third 10 pounds	2.00
fourth 10 pounds	1.25
fifth IO pounds	0.50
sixth 10 pounds	0.00

A. IO pounds of NH3
B. 40 pounds of NH3
C. • 50 pounds of NH3
D. 60 pounds of NH3

20. A farmer purchases 500-pound feeder steers for $0.60 per pound and plans to sell the steers at 800 pounds. The farmer estimates the total cost of gain to be $0.55 per pound. The nearest breakeven price when the steers are sold at 800 pounds is:

A. $0.55/pound.
B. $0.57/pound.
C. * $0.58/pound.
D. $0.60/pound.

21. A soybean producer decides to store soybeans in the local elevator for three months. The price at harvest is $6.00 per bushel. The elevator charges $0.02 per bushel per month for storage, plus a $0.05 per bushel handling charge. The producer has 5,000 bushels to sell and must borrow $30,000 at 8% annual interest while he stores the soybeans. What price must be received for the soybeans to break even and cover the storage and opportunity costs?

A.• $6.23
B. $6.32
C. $6.39
D. $6.44

22. A farmer is purchasing a new baler at a cost of $24,000. The dealer is financing the baler under the following terms: 10% down payment with the balance repaid in equal payments over the next five years at 8 % APR. The farmer expects the baler to last for 7 years and have a salvage value of $5,000. How much interest will the farmer pay the first year of the loan?

A.• $1,728
B. $2,340
C. $2,800
D. $3,120

23. A $1 deductible expense (before tax) will cost_ after tax if the farmer's marginal tax rate is 40%.

A $0.00
B .$0.40
C. *$0.60
D $1.00

24. A $50,000 loan is amortized at 8% interest for 7 years and yields annual payments of$9,604.30. How much of the first year's payment is principal?

A. $4,000.00
B. $4,604.30
C. • $5,604.30
D. $9,604.30

25. For the above loan of $50,000, how much total interest is paid over thelife of the loan?

A $4,980.01
B.* $17,230.10
C. $28,000.00
D. $67,230.10

26. Liquidity is best described as:

A.* the ability to meet cash obligations as they come due.
B. total assets minus total liabilities.
C. having no long-term debt.
D. the rate of capital turnover.

27. A cattle feeding operation has sales of$60,000, feed purchases of$40,000, other costs of$2,000, an opening inventory of$40,000, and a closing inventory of$32,000. What is the net farm income for this operation on an accrual basis?

A. $2,000
B. • $10,000
C. $18,000
D. $20,000

28. In analysis of a farm, what would you do if a cash flow projection indicated that there would be more expenses than income in a certain month?

A. tenninate the enterprise causing the cash flow problem that month
B. • use savings, delay expenses, move up sales, or borrow money
C. change from cash to accrual accounting method
D. change depreciation methods

29. If a farmer writes a check for $8,000 to pay off the remainder ofa tractor loan:

A. assets are reduced and equity declines.
B. liabilities are reduced and equity increases.
C. * assets and liabilities are reduced and equity is unaffected.
D. assets, liabilities, and equity each decline.

30. A farmer had a net fann income last year of$40,000. The farmer paid $10,000 for interest on borrowed capital during the year. Opportunity costs for unpaid family labor and management were $30,000. Equity in the business was $200,000. What was the percent return on equity?

A.* *5%*
B. 10%
C. 15%
D. 20%

31. The specified price at which the option purchaser may buy or sell the commodity is the:

A. * strike price.
B. call price.
C. put price.
D. option price.

32. An increase in the demand for beef with no change in beef production or other factors will:

A. decrease the price for beef and increase demand for feed.
B. decrease the prices for pork and poultry.
C. * increase the price ofbeef.
D. reduce beef prices and increase pork prices.

33. A lease between a landlord and a tenant is equitable if it:

A. divides returns equally between the landlord and the tenant.
B. is written by an attorney.
C. holds strictly to traditional lease rates in the area.
D. * divides the income between the landlord and the tenant according to the contribution of each.

34. Which of the following has NO direct impact on the production costs of a certain product?

A. production methods
B. amount of input used
C. • consumer demand
D. size of the operation

35. One possible advantage of incorporating the family farm is

A. the need to keep fewer records
B. * limited liability
C. double taxation
D. fewer regulations and rules to follow

36. If the cost of producing an acre of canning peas is $280 and the expected yield is 2000 pounds per acre, the break-even selling price must be

A. 8 cents/lb
B. 10 cents/lb
C. 12 cents lib
D. • 14 cents/lb

37. An accrued liability that must be paid within the year is a

A. current asset
B. non-current asset
C. non-current liability
D. * current liability

38. A farmer has a debt:equity ratio of 2: l. The current liabilities total $50,000 and the non-current liabilities total $90,000. What is the value of the assets?

A. $280,000
B. $210,000
C. $140,000
D. • $70,000

Use the following information to answer Questions 39-42:

N	Present Value of a $1	Future Value of a $1	Present Value of Annuity
I	0.913	1.095	0.913
2	0.834	1.199	1.747
3	0.762	1.312	2.509
4	0.696	1.437	3.205
5	0.635	1.575	3.840
6	0.580	1.724	4.420

39. An alfalfa field will produce $500 income during the first year, $1,000 each year for the next 4 years, and $750 the sixth year. What is the present value of this income stream?

A.• $3,818.50
B. $4,676.50
C. $4,731.50
D. $5,589.50

40. A beef cow produces ***$BO/year*** for 5 years and can be sold for $400 at the end of the fifth year. Determine the present value of the cow.

A.* $561.20
8. $624.70
C. $663.10
D. $836.50

41. With two years of income remaining in a beef cow, how much should she be worth?

A. $305.42
a.• $473.36
C. $581.72
D. $606.81

42. If the farmer expects interest rates to decrease, but no decrease in net returns to cattle, what impact is this likely to have on the present value of the beef cow?

A. decrease the present value
B. • increase the present value
C. would not change the present value
D. cannot tell

43. Commercial fertilizer should be applied to crops as long as the:

A. added fertilizer increases crop yields per acre.
8. added production increases gross farm income.
C. added fertilizer maintains soil productivity.
D.* value of the increased production **is greater** than the added costs of the fertilizer.

44. For maximum net returns, a farmer should substitute machinery for labor when:

A. the annual costs of machine use are equal to the costs of labor.
8. • the value of labor saved is higher than the costs of the machine used.
C. there is a limited supply oflabor.
D. the additional machine will increase labor efficiency.

45. An increase in the value of the U.S. dollarrelative to the currency ofother countries should result in:

A. more costly imports to the U.S.
B.• less costly imports to the U.S.
C. increased exports to the U.S.
D. no effect on imports orexports.

46. A farmer has $10,000 in equipment used exclusively for com. Assume that this equipment will last 5 years and have a salvage value of$0. The farmer plans to plant 100 acres of com each year. Assuming an interest rate of 8% on average annual investment, what will be the average fixed costs per year for the next 5 years (depreciation and interest) for this machinery per acre of com?

A. $16
B. $20
C.* $24
D. $28

47. The main difference between cash and accrual accounting is that accrual accounting includes:

A. a charge for unpaid family labor.
B depreciation.
C*. adjustments for changes in inventory.
D. sales of capital assets.

48. A farmer has total assets of$250,000; total liabilities of$156,000; and net worth of$94,000. The debt/asset ratio is:

A. 38: l
B. 60: 1
C.* 62: 1
D. 96: I

A farmer has a $50,000 loan amortized at *9%* interest for 15 years. Use the information to answer questions 49-51. Note: round answers to the nearest dollar.

49. The loan's yearly annual payment is $6203. How much of the first year's payment is principal?

A. $1,092.
B.* $1,703
C. $2,592.
D. $4,500.

50. If the 15th and final payment includes $512 of interest, what was the outstanding principal balance after the 14th payment?

A. $4500
B $4,622
C. $4,715
D.* $5691

51. How much total interest is paid over the life of the loan?

A $7544
B* $43,045
C. $51,852
D. $101,852

52. Crop insurance, hedging, options, and liability insurance provide a means of:

A increasing profits.
B king capital.
C. • reducing risks.
D. lowering costs.

53. Assume an acre ofland will produce an average net return to land of $40.00. A farmer wants a 7% return to land. What is the maximum the farmer can pay for an acre of this crop land?

A $280
B. $400
C. $428
D.* $571

54. A farmer has liabilities of$456,000, and assets totaling $658,000, of which machinery is $240,000. What will the farmer's debt/equity ratio be if the lender devalues the machinery by 10%?

A. 1.39
B. 2.25
C.* 2.56
D. 3.56

55. If the debt to equity ratio is 1:2, the return on equity is 12%, and the average interest rate on debt is 9%, what is the return on assets?

A.'" 11.00%
B. 10.00%
C. 9.00%
D. 10.50%

56. The present value of$100 that will be received at the end of 1 year, given a 5% interest (discount) rate is:

A. $90
B.* $95
C. $100
D. $105

57. An elevator quotes the price per bushel of soybeans at "25 cents under November futures." What would futures have to sell for to provide a cash price of $7 per bushel?

A. $6.75
B* $7.25
C. $7.50
D. $8.00

58. A local elevator quotes com at 20¢ under March futures, and will pick up the grain for free. A terminal quotes 5¢ under, but it costs 10¢ to haul it there. If March futures sell for $3.25, where can you get the highest net price, and how much is it?

A.* $3.10 at the terminal
B. $3.20 at the terminal
C. $3.20 at the elevator
D. $3.05 at the elevator

59. In July a farmer sells November futures at $7.35 to hedge new crop soybeans. At harvest, the farmer buys back the contract for $6.85, and sells July futures for $7.15. What is net futures selling price for the July contract?

A. $6.85
B. $7.05
C. $7.35
D.* $7.65

60. A farmer can produce 100 bushels of wheat per acre with 100 lb. of commercial fertilizer per acre. A second 100 lb. of fertilizer will produce an additional 20 bushels of wheat. A third application of 100 lb. of fertilizer will increase production by 10 bushels, and a fourth 100 lb. will add 5 bushels of wheat to total production. If each 100 lb. of fertilizer costs $15.00, and a bushel of wheat is worth $2.75, how many pounds of fertilizer should be used to maximize net income?

A. 100
B. 200
C.• 300
D. 400

2002 STATE AG ECON TEST

Answer Sheet

Name _____ Contest# School _____

1.	26.	51.
2.	27.	52.
3.	28.	53.
4.	29.	54.
5.	30.	55.
6.	31.	56.
7.	32.	57.
8.	33.	58.
9.	34.	59.
10.	35.	60.
11.	36.	
12.	37.	
13.	38.	
14.	39.	
15.	40.	
16.	41.	
17.	42.	
18.	43.	
19.	44.	
20.	45.	
21.	46.	
22.	47.	
23.	48.	
24.	49.	
25.	50.	

2002 STATE AG ECON TEST

Section 1 **MULTIPLE CHOICE** **Name**_ _ _ _ _ _ _ _ _ _

Select the best answer for each question. Each question is worth *5* points.

1. A farmer owns a 10,000 bushel grain bin and is deciding whether to store or sell this year's crop. The farmer should store the crop if the:

   a. current cash price does not cover the production costs.
   b. future price will probably be the same as the current cash price.
   c. grain bin is paid for.
   d. future price exceeds the cash price by at least enough to cover variable storage costs plus interest andshrinkage.

2. Renting farmland on shares of production rather than cash results in:

   a. less risk for the landlord and and more risk for the tenant.
   b. more risk for the landlord and less risk for the tenant.
   c. more risk for both the landlord and the tenant.
   d. less risk for both the landlord and the tenant.

3. By adding a poultry enterprise to a crop farm, a producer becomes more:

   a. integrated.
   b. motivated.
   c. specialized.
   d. diversified.

4. The law of diminishing returns occurs when:

   a. yields are declining.
   b. inputs are declining.
   c. marginal physical product is declining.
   d. average physical product is negative.

5. When preparing an annual budget for a com production enterprise, land ownership costs are considered to be:

   a. a variable cost.
   b. a depreciable cost.
   c. an operating cost.
   d. a fixed cost.

6. Wheat yields an average of35 bushels per acre while sunflower yields an average 15 cwt. per acre. Production costs for wheat are $116.00 per acre and for sunflowers are $121.00 per acre. If the price for wheat is $3.65 per bushel, what would the price per cwt. of sunflowers need to be to equal the net return for wheat?

   a. $ 8.40
   b. $ 8.85
   C. $ **9.10**
   d. $10.00.

7. Crop insurance provides a means of:

   a. lowering costs.
   b. reducing risks.
   c. increasing profits.
   d. increasing working capital.

8. A farm manager is considering the purchase of a used combine. The machine would have fixed costs of $12,500 per year and variable costs of $15 per acre. The local custom rate is $25 per acre. How many acres per year must be harvested to justify the purchase?

   a. 1000
   b. 1125
   c. **1250**
   d. 1375

9. The primary reason for hedging cattle with futures or options is:

   a. to guarantee a profit
   b. to increase price risk
   c. to reduce price risk
   d. to eliminate price risk.

1O. If a field of canola produced 9 cwt. per acre and the fixed costs of production were $50.50 per acre and the variable costs were $23.75 per acre, what was the total cost per cwt of canola produced?

   a. $2.64
   b. $2.97
   C. **$5.61**
   d. $8 .25

11. Expenses that have been incurred but not yet paid are:

    a. spent expenses
    b. accrued expenses
    c. recorded expenses
    d. cash expenses.

12. As additional units of a good or service are consumed, the satisfaction derived from the consumption of each successive unit is reduced. This statement defines the:

    a. law of comparative advantage
    b. principle of ceteris paribus
    c. principle of diminishing marginal rates of substitution
    d. law of diminishing marginal utility
    e. point of diminishing marginal returns.

13. What type of business is the oldest and largest in number in the United States today?

    a. sole proprietorship
    b. partnerships
    c. corporations
    d. cooperatives.

14. Net Domestic Product (NOP) is equal to GDP minus

    a. indirect taxes
    b. consumption
    c. depreciation
    d. government transfer payments.

15. A wheat farmer is faced with applying nitrogen fertilizer to his fields prior to planting his crop. His fertilizer dealer has notified him that the price of nitrogen fertilizer has just decreased by 25 percent. The farmer expects the price of wheat at harvest time to be $2.50 per bushel. What should he do?

    a. apply 25 percent more fertilizer than last year
    b. apply less fertilizer than last year because of the low wheat price
    c. apply that amount of fertilizer where the fertilizer cost added by the final bushels produced is $2.50
    d. apply that amount of fertilizer where the marginal cost is $2.50 + *25%* (2.50)/bu.

16. The price system detennines the composition of Gross Domestic Product under which system of politico-economic organization?

a. Communism
b. Capitalism
c. Socialism
d. Calvinism.

17. Who owns a Cooperative?

a. the proprietor
b. the partners
c. the public
d. the member stockholders.

18. When the futures price moves closer to the cash price:

a basis narrows
b. basis widens
c. basis remains the same
d. futures make less money for the hedger.

19. Which of the following is an operating expense?

a. purchase of milk equipment supplies
b. purchase of a milking parlor
c. purchase of a pick-up
d. principal payment on a tractor loan.

20. The money deposited with a broker to trade futures contracts is called:

a. basis
b. margin
c. commission
d. spread.

21. A demand curve shows the relationship between quantity demanded and:

a. quality
b. price
c. income
d. demand.

22. Before harvest, a farmer has spent $20 per acre for labor, seed, and machine costs on oats. The market price is $1.50 per bushel and the expected yield is 20 bushels per acre. The oats can be harvested for $8.00 per acre. The farmer should:

a. assume a $20 loss for the year and leave the oats in the field.
b. harvest and sell the oats crop.
c. sell the oats crop for pasture of $25 per acre.
d. sell the oats crop standing in the field for hay at $27 per acre.

23. A difference between buying or selling a futures contract and buying a put or a call option is:

a. the cost of the futures contract is fixed, but the option is subject to margin calls.
b. the cost of the option is fixed, but the futures contract is subject to margin calls.
c. no difference-both are subject to margin calls.
d. no difference-neither is subject to margin calls.

24. The Law of Supply implies:

a. as prices for a commodity rise, production of the commodity will increase.
b. as prices for a commodity fall, consumption for the commodity will rise.
c. as additional units of a commodity are consumed, the satisfaction gained from each additional unit decreases.
d. products can be substituted for each other, but at a diminishing rate.
e. fixed costs are independent of the level of production.

25. The objective of the consumer when alloca ing income among various consumption, investment, and savings activities:

a. to get by as cheaply as possible.
b. to reduce cost of living to the smallest possible amount.
c. to maximize long-term net worth.
d. to live fast, love hard, die young, and leave lots of pretty memories.
e. to gain the maximum utility (or satisfaction) permitted by the level of income.

26. For the individual firm, profits will increase if which of the following occur?

a. fixed cost decreases
b. price of the variable resource declines
c. product prices increase
d. all of the above.

27. What communicates the scarcity of resource?

a. quantities supplied
b. prices
c. quantities demanded
d. capital invested.

28. Which of the factors below is <u>not</u> a ceteris paribus condition of market supply?

a. consumer income
b. technology
c. cost of resources
d. the value of production alternatives
e. none of the above.

29. On November 1, a rancher borrowed $300,000 to buy cattle. On May 1 of the following year, the rancher repaid the $300,000 plus $22,500 in interest. What annual rate of the interest did the rancher pay?

a. 10.0%
b. 12.5%
c. 15.0%
d. 17.5%

30. Marginal analysis is used to:,

a. determine the most profitable level of an input to use
b. measure the efficiency of a business enterprise
c. help managers decide between two different options
d. determines the maximum productivity of inputs.

31. A fanner can rent an additional 100 acres without having to purchase additional equipment. The effect on costs will:

a. increase unit fixed costs
b. decrease unit fixed costs
c. increase unit variable costs
d. decrease unit variable costs.

32. What is the future value of $1000 placed in an interest bearing account at 5% APR for three years?

a. $1050
b. $1150
c. **$1158**
d. **$1276**

33. A supply curve shows the relationship between quantity supplied and

a. quality
b. price
c. income
d. demand.

34. Fanner Ben is putting together his annual balance sheet as of December 31, 2001. He knows he must calculate accrued interest on each loan. He needs your help. He has an FMC Tractor loan with semi-annual payments due in April and October. Payments are due mid-month. The interest rate is I0.5%. Each payment is $6,554. Total principal outstanding as of December 31, 2001 is $41,936. How much interest accrued from mid-October until December 31?

a. $ **688**
b. $1,101
c. $ 917
d. $2,202

3S. Farmer Ben also has an annual land payment of $12,840. It is due mid-August of each year. The interest rate is I 0.5% and the total principal outstanding is $77,227. How much interest accrued in the 4.5 months from mid-August to the balance sheet date?

a. $4,815
b. $3,041
c. $5,608
d. $ 676

36. How much of the tractor loan will Farmer Ben record on the Balance sheet as "current principal" as of December 31, 2001?

a. 4,731
b. 9,800
c. 8,025
d. 7,772

37. What is the purpose of an income statement?

a. show net liabilities
b. show net cash
c. show profit or loss
d. none of the above.

38. If a business enterprise earns a return on assets of 9% and the average cost of debt is 8% will the return on equity be?

a. more than 9%
b. less than 9%
c. show profit or loss
d. none of the above.

39. One measure of farm liquidity is:

a. owner equity
b. net farm income
c. working capital
d. solvency
e. net farm income from operations.

40. Which of the following statements shows operating results over a specified period of time?

a. balance sheet
b. statement of cash flows
c. income statement
d. a and b
e. band c.

41. You decide to purchase a new truck. The sale price is $30,000. You pay $5,000 down and your banker provides a loan of $25,000 to be repaid in equal monthly payments of $760.55 over three years. The interest rate is 6% per year. The amounts of principal and interest in the first payment will be:

a. principal= 635.55; interest= 125.00
b. principal= 610.55; interest= 150.00
c. principal= 760.55; interest= 125.00
d. principal= 698.05; interest= 62.50

•

Use the following information to answer questions 42 to 46.

Allocation of Capital

Operating Capital	Seed	Marginal value products ($) Fertilizer	Chemicals
First $100	400	250	350
Second$100	300	200	300
Third $100	250	150	250
Fourth $100	150	105	200
Fifth $100	100	90	150

42. If only $100 of operating capital is available, which input should be purchased?

a. fertilizer b. seed c. chemicals d. all are equal

43. If all capital has to be borrowed and the interest rate is I0%, which input would the most operating capital be invested in?

a. fertilizer b. seed c. chemicals d. all are equal

44. If only $700 of operating capital is available, how much operating capital would be used to purchase seed?

a. $0 b. $100 c.$200 d.$300 e.$400 f. $500

45. If only $100 of operating capital is available and it was used to buy chemicals, what is the opportunity cost of the operating capital?

a. $400 b. $250 c.$350 d.$300 e. none of these

46. The table and questions represent the application of the:

a. constant returns to size principle b. production function

c. equal marginal principle d. isocost concept.

47. The values in a crop enterprise budget are normally for:

a. one bushel of output
b. I00 pounds of output
c. one unit of output
d. one acre.

48. We compute cost of production as

a. total fixed cost divided by output
b. total variable cost divided by output
c. total cost divided by total output
d. output selling price.

49. There are increasing returns to size whenever a larger business:

a. has a larger average cost per unit of output
b. has a lower average cost per unit of output
c. has higher fixed costs per unit of output
d. has no relationship to average cost.

50. In a feed ration of corn and soybean meal, if the price of com decreases relative to the price of soybean meal, you would now feed:

a. more com and less soybean meal
b. less corn and more soybean meal
c. you need more information to answer
d. you would continue feeding the same combination.

51. We maximize profit somewhere in the range where marginal physical product is

a. decreasing but still positive
b. increasing but positive
c. constant
d. negative.

52. At the output level where marginal cost is equal to average total cost

a. marginal revenue equals marginal cost
b. marginal cost is also equal to average variable cost
c. they are both less than average fixed cost
d. average total cost is at its minimum value.

53. A grain drill has annual ownership costs of $3,600 and operating costs of $3.50 per acre. The same operation can be custom hired for $6.00 per acre. It would be cheaper to custom hire the drilling, if the annual use is?

a. more than 600 acres
b. less than 600 acres
c. more than 1440 acres
d. less than 1440 acres.

54. As output decreases with no changes in total cost, breakeven price will

a. increase
b. decrease
c. remain constant
d. initially decrease then begin to increase.

55. Complementary enterprises are those where:

a. the output of one can be increased only by reducing output of the other
b. the output of both enterprises can be increased at the same time
c. the output of one can be increased with no change in the output of the other
d. their substitution ratio is zero.

56. If a partial budget shows some fixed or ownership costs under Added Costs, it means

a. the proposed alternative requires purchasing a new capital asset
b. the proposed alternative would allow sale of a capital asset that will no longer be needed
c. a new capital asset must be purchased next year with either alternative.
d. there is an error on the budget as fixed costs are never included under Added Costs.

57. A sunk cost occurs:

a. in the short run once a variable input is used in the production process
b. in the long run when a variable cost becomes a fixed cost
c. in the short run when a fixed cost becomes a variable cost
d. when a non-cash cost becomes a cash cost.

58. The main advantage of purchasing used machinery instead of new machinery is:

a. lower initial investment
b. increased reliability
c. a longer expected useful life
d. lower repair costs.

Use the following information to answer questions 59 and 60. Region A can produce 60 bushels of com per acre and 30 bushels of wheat per acre. Region B can produce 90 bushels of com per acre and 60 bushels of wheat per acre.

59. Region B has a comparative advantage producing
a. corn b. wheat c. both crops d. no crop

60. Region A has an absolute advantage of producing
a. corn b. wheat c. both crops d. no crop

2002 State Ag Econ Test
Answer Sheet

Name *Key* Contest# School___________ 1. _______

26. J2

27. 28. a 31. A

2. 16--
3. a

4. C!.

5. ±

6.

29.

30. ±

31.

32. D
33. C

54. A
55. B
56. A

7.
8.

9.

10. ±

33.

34. C

35. .as

57. A
58. A

59. 8

60. D

11. A
12. .C
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14.

15. ±

36.

37. C.
38. A

39. C

40. £

16. A
17.

18.

19. A

41. 6
42. 8

43. C.

44. D

20.
21.
22. /)
23. 8
24. /
25.

45. C!
46. C
47. D
48. C.
49. 8
50. A

Name_____

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Select the most correct answer for each question. Each question is worth *5* points.

1. A feedlot operator buys feeder steers, finished them, and sells them. The operator estimates that finished steers will sell for $80 per cwt and that it will cost $250 per head to grow them from the 700 pound purchase weight to the 1100 pound selling weight What is the highest price the operator can pay for 700 pound feeder steers to break even?

   A. $96.00/cwt
   B. $90.00/cwt
   C. $80.00/cwt
   D. $62.50/cwt

2. A marketing function which tends to regulate the supply of a product and provide a stable market is:

   A. assembling.
   B. grading.
   C. processing.
   D. storing.

3. Which of the following is affected by the type of business organization a farmer chooses?

   A. amount of machinery owned.
   B. production (crops and livestock) yields.
   C. the value of the crops held in inventory.
   D. transferability of ownership.

4. If you are considering a change in the farm business that will affect only a few items in your total farm budget, this change would appropriately be evaluated using a:

   A. total farm budget.
   B. cash flow budget.
   C. depreciation schedule.
   D. partial budget.

5. Accrual accounting:

   A. records income when received and expenditures when paid.
   B. records income when earned and expense when incurred.
   C. does not require maintaining an inventory of assets.
   D. is not recommended by accountants.

6. Net worth is a measure of:

   A. managerial ability.
   B. financial position.
   C. profitability.
   D. liquidity.

7. Which of the following is considered to be a fixed cost?

   A. hired seasonal labor.
   B. depreciation on machinery.
   C. machinery repairs.
   D. feed purchases.

8. Which of the following pricing alternatives were not available in the feeder cattle pricing exercise?

   A. do nothing.
   B. sell futures.
   C. buy put options.
   D. forward cash contracts.

9. Which of the following statements are true regarding the use of put option contracts (compared to selling futures or doing nothing) to help price cattle?

   A. options are always more expensive.
   B. options never produce the highest net price regardless of whether prices increase or decrease.
   C. options produce the highest second best price regardless of whether prices increase or decrease.
   D. A, B and C are all true.

10. The primary reason for hedging cattle with futures or options is:

   A. to guarantee a profit.
   B. to increase price risk.
   C. to reduce price risk
   D. to eliminate price risk.

11. On April 1, Karen borrowed $8,000 to plant com. On November 1, she repaid the $8,000 along with *$49S* interest. What annual interest rate did she pay?

    A. 6.187%
    B. 9.281%
    C. 10.607%
    D. 12.375%

12. A farmer wants to evaluate ifhe should rent additional hay acreage to replace purchase hay for his dairy herd. Which of the following items would not be considered in a partial budget?

    A. rent paid and hay production costs.
    B. current hay purchase price.
    C. current milk production and price.
    D. machinery and labor avai)ability and requirements.

13. One of the best measures of financial progress over a period of years would be:

    A. income tax paid.
    B. capital investment.
    C. net cash income.
    D. change in net worth.

14. If consumers buy more beef because beef prices have decreased, and nothing else affects the market, there has been:

    A. an increase in demand for beef.
    B. a decrease in demand for beef.
    C. no change in demand for beef.
    D. a decrease in the supply of beef.

15. Return to management is net cash farm income.

    A. minus debt payments.
    B. minus the value of unpaid labor, depreciation, interest on equity capital, and adjustments for inventory changes.
    C. minus the value of operator's Jabor and interest on debt payments.
    D. minus the interest on equity capital, depreciation, and adjustments for inventory changes.

16. A soybean producer decides to store soybeans in the local elevator for five months. The price at harvest is $6.00 per bushel and the elevator charges $.02 per bushel per month for storage plus $.05 per bushel handling charge. The producer has 4,000 bushels to sell and must borrow $24,000 at 8% annual interest while storing the soybeans. What price must be received for the soybeans to break even and cover storage and opportunity costs?

A. $6.15
B. $6.20
C. $6.25
D. $6.35

17. A producer sells 9 feeder steers for $98/cwt. The average weight per steer is 700 pounds. There is a 2.5 percent sales commission and yardage fees of $2.50 per head. The net amount received for the steers would be:

A. $6,665.50
B. $6,688.50
C. $5,997.15
D. $ 666.55.

18. A farmer who sells market hogs could use the futures market to reduce price risk by:

A. buying a hog Put option
B. selling a hog Put option
C. buying a hog Call option
D. selling a hog Call option.

19. A farmer was late getting soybeans planted and an early frost hit the crop before the crop had matured. The harvest costs are $40 per acre, and the returns woul be $60 per acre from the existing crop. Prior to the frost, $106 per acre was invested in operating expenses. The farmer should:

A. abandon the crop because the famier cannot cover all variable expenses
B. rent the field to a neighbor for $10 per acre to use as sheep grazing, instead of harvesting the crop
C. harvest the soybeans and sell the soybeans for $60 per harvested acre
D. harvest half of the acres and abandon the other half.

20. A partial budget for planting soybeans instead of com this year shows a net positive change of $3,000. This indicates the fanner should:

A. plant com instead of soybeans to earn $3,000·more profit than if he/she planted soybeans.
B. plant soybeans instead of com to earn a total profit of $3,000.
C. plant soybeans instead of com to earn $3,000 more profit than if he/she planted com.
D. plant com instead of soybeans to earn a total profit of $3,000.

21. Farm cooperatives are formed to allow farmers to pool resources or commodities in order to save on p oduction expenses or to gain market power. Member patrons of a cooperative control the business by voting on policy and electing board members. Voting is usually on the basis of_____

A. shares of stock in the business
B. one vote per member
C. volume of business with the cooperative
D. years of membership in the cooperative.

22. A lease-between a landlord and a tenant is equitable if it:

A. divides returns equally between the landlord and the tenant
B. is written by an attorney
C. holds strictly to traditional lease rates in the area
D. divides the income between the landlord and the tenant according to the contribution of each.

23. In analysis of a farm, what would you do if a cash flow projection indicated that there would be more expenses than income in a certain month?

A. tenninate the enterprise causing the cash fl w problem that month
B. use savings, delay expenses, move up sales, or borrow money
C. change from cash to accrual accounting method
D. change depreciation methods.

24. A $50,000 loan is amortized at 8% interest for 7 years and yields annual payments of $9,604.30. How much of the first year's payment is principal?

A. $4,000.00
B. $4,604.30
C. $5,604.30
D. $9,604.30.

25. For the $50,000 loan in question 24, how much total interest is paid over the life of the loan?

A. $ 4,980.01
B. $17,230.10
C. $28,000.00
D. $67,230.10.

26. If the increase in wheat yield becomes smaller for each additional 10 pounds of nitrogen fertilizer applied after 30 pounds per acre have been applied, this is an example of:

A. increasing marginal returns
B. unprofitable use of fertilizer
C. diminishing marginal returns
D. elasticity.

27. Frank Perdue raises 2,000,000 broilers annually. In addition, Frank Perdue owns the feed mill, which provides feed for the birds, owns the processing facility, and markets the dressed birds to retail grocery stores. This type of business structure is known as:

A. horizontal-integration
B. marketing cooperative
C. vertical integration
D. supply cooperative.

28. The U.S. is a major exporter of feed grains and an importer of coffee, bananas, and pineapple. We could produce all of these commodities in the U.S. but choose to import them because:

A. International cartels prohibit the U.S. from producing imported crops
B. each nation produces and exports goods for which it has a comparative advantage.
C. U.S. farmers do not know how to grow these crops
D. the U.S. allows other nations to benefit from certain crops as part of our overall aid program.

29. Money that is owed to a business or individual from whom products or services were purchased is called an:

A. account receivable
B. account payable
C. income
D. expense.

30. A written claim listing the collateral to secure a loan:

A. market
B. option
C. premium
D. mortgage.

31. Using a straight line depreciation schedule, what would the annual depreciation be for a tractor costing $56,000, estimated to have a salvage value of $8,400 at the end of a 10-year use life?

A. $8,400
B. $5,600
C. $4,760
D. $2,380.

32. You have leased forty acres which had a yield of forty bushels of wheat per acre potential. You leased the land on a crop share basis in which you give the landowner 1/3 of the crop yield. If the price of wheat is $3.00 per bushel your share of the crop is worth:

A. $1,066
B. $1,200
C. $1,600
D. $3,200.

33. The specified price at which the option purchaser may buy or sell the commodity is the:

A. strike price
B. call price
C. put price
D. option price.

34. Commercial fertilizer should be applied to crops as long as the:

A. added fertilizer increases crop yields per acre
B. added production increases gross farm income
C. added fertilizer maintains soil productivity
D. value of the increased production is greater than the added costs of the fertilizer.

35. An increase in the value of the U.S. dollar relative to the currency of other countries should result in:

A. more costly imports to the U.S.
B. less costly imports to the U.S.
C. increased exports from the U.S.
D. no effect on imports or exports.

A farmer has a $50,000 loan amortized at 9% interest for 15 yean. Use the information to answer questions 36-38. Note: round answers to the nearest dollar.

36. The loan's yearly annual payment is $6,203. How much of the first year's payment is principal?

A. $1,092
B. $1,703
C. $2,592
D. $4,500.

37. If the 15th and final payment includes $512 of interest, what was the outstanding principal balance after the 14th payment?

A. $4,500
B. $4,622
C. $4,715
D. $5,691.

38. How much total interest is paid over the life of the loan?

A. $ 7,544
B. $ 43,045
C. $ 51,852
D. $101,852.

39. A farmer can produce 100 bushels of wheat per acre with 100 lb. of commercial fertilizer. A second 100 lb. of fertilizer will produce an additional 20 bushels of wheat. A third application of 100 lb. of fertilizer will increase production by 10 bushels, and a fourth 100 lb. will add *S* bushels of wheat to total production. If each 100 lb. of fertilizer costs $15.00, and a bushel of wheat is worth $2.7S, how many pounds of fertilizer should be used to maximize net income?

A. 100
B. 200
C. 300
D. 400.

40. A farmer has a debt: equity ratio of2: 1. The current liabilities total $50,000 and the non-current liabilities total $70,000. What is the value of the assets?

A. $240,000
B. $120,000
C. $ 60,000
D. $180,000.

41. "Financial solvency" refers to the:

A. farmer's ability to solve problems
B. rate at which nitrogen fertilizer dissolves in wet soil
C. value of total assets relative to the amount of total debt
D. ability of a farmer to pay current debts with available cash flow.

42. In July a farmer sells November futures at $7.35 to hedge new crop soybeans. At harvest, the farmer buys back the contract for $6.85, and sells July futures for $7.15. What is net futures selling price for the July contract?

A. $6.85
B. $7.05
C. $7.35
D. $7.65.

43. A farmer has total assets of$250,000; total liabilities of$156,000; and net worth of $94,000. The debt/asset ratio is:

A. .38: I
B. .60: I
C. .62: 1
D. .96: 1

44. To consider the time value of money in analyzing alternative farm investments, one should choose the investment with the:

A. highest net present value
B. largest net cash flow over the lifetime of the investment
C. highest average profits over the investment lifetime
D. lowest cost.

45. If an acre of land will net $80 growing com, $110 growing soybeans, $90 growing alfalfa, and $70 growing wheat, the opportunity cost of growing wheat is:

A. $ 80
B. $110
C. $ 90
D. $ 40.

46. A farmer has 80 acres of wheat which produced 2,455 bushels and the price of wheat is $3.95 per bushel. The farmer's operating costs of production were $37.45 per acre and fixed costs were $19.25 per acre. What is breakeven yield?

A. 5.05 bu per acre
B. 9.48 bu per acre
C. 14.35 bu per acre
D. 30.69 bu per acre

47. Which one of the following would tend to reduce risk for the manager of a farm business?

A. selecting the crop with the highest net return
B. speculating on the futures market
C. diversifying into several enterprises
D. specializing in a single enterprise.

48. Purchasing a larger piece of machinery to reduce costs is profitable if:

A. the savings in labor is less than the cost of owning and operating the larger machine
B. there is sufficient capital available
C. the savings in labor is equal to the cost of owning and operating the larger machine
D. the value of labor saved is greater than the additional cost of owning and operating the larger machine.

49. During the last 12 months, a farm had cash receipts of $15,000 :from the sale of crops, and cash outlays of$14,000. The farm had a:

A. net farm income of $1,000
B. positive cash flow of $1,000
C. net worth increase of$1,000
D. depreciation change ofSl.000.

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50. The major reason for making an estate the beneficiary of a life insurance policy is to:

A. provide liquid funds for funeral expenses
B. reduce estate tax liability
C. .provide insurance to protect the heirs
D. provide liquid funds to satisfy tax liability.

S1. When an increase in the level of production of one enterprise causes a reduction in the level of production of another enterprise, these two enterprises are said to be:

A. independent
B. competitive
C. supplementary
D. complementary.

52. The value of a resource in its next best use is called:

A. variable cost
B. foregone interest
C. opportunity cost
D. value of the marginal product.

53. Which of the following is considered Schedule F Farm Income?

A. cull breeding stock that appear on the depreciation schedule.
B. crop **sales**
C. sales of farm equipment
D. sale of land.

54. The higher the price of strawbenies, other things being equal, the quantity demanded:

A. will increase
B. will decrease
C. will not change
D. cannot be predicted :from information given.

55. The average total cost of producing units of output can be found by:

A. setting marginal revenue equal to marginal cost
B. dividing total fixed cost by the amount of output produced
C. dividing total variable cost by the amount of output produced
D. dividing total cost by the amount of output produced.

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56. What value should you use on cow-calf enterprise budget for the value of homegrown feeds, such as com or bay?

A. cash invested in growing crops
B. actual purchase cost of similar commercial feeds
C. actual production costs of the homegrown feeds
D. net selling price (opportunity cost) of the homegrown feeds.

57. A farmer wants to project the returns per acre from producing com on his farm. The best method to determine would be to use:

A. **a** cash flow statement
B. an enterprise budget
C. an income statement
D. a total budget.

58. Supply curves show the relationship between the quantity of a product supplied to the market by producers and the:

A. prices of inputs
B. demand for the product
C. availability of labor
D. product price.

59. Money that is due from a business or individual who purchased products or services from you is called an:

A. account receivable
B. account payable
C. income
D. expense.

60. Of the following, which is the most liquid asset?

A. land
B. stored grain
C. machinery
D. buildings.

1999 State Ag Econ Test
Answer Sheet

Name KE'/ Contest#_____ School_____

1. a
2. fl
3. /)
4. D
5. B
6. li
7. l3
8. /)
9. D
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12. C
13. p
14. C
15. /J
16. D
17. C
18. A
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29. B
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33. A
34. /)_
35. B
36. fl
37. D
38. B
39. (!
40. D
41. e.
42. 12
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45. /J
46. C
47. e
48. D
49. lg
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51. B
52. Cc
53. B
54. B
55. D
56. D
57. 8
58. D
59. A
60. fl

1998 Okmulgee Ag Econ Test
Answer Sheet

Name _____ Contest# School _____

1.	26.	51.
2.	27.	52.
3.	28.	53.
4.	29.	54.
5.	30.	55.
6.	31.	56.
7.	32.	57.
8.	33.	58.
9.	34.	59.
10.	35.	60.
11.	36.	
12.	37.	
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16.	41.	
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19.	44.	
20.	45.	
21.	46.	
22.	47.	
23.	48.	
24.	49.	
25.	50.	

Name_____

1998 Okmulgee Ag Econ Test

Select the most correct response for each question. Each response is worth 5 points for a total of 300 points.

1. Tom Farmer earned $20,000 from fanning last year. His total assets are valued at $380,000. He has outstanding mortgages and loans of $125,000. What rate of return did he earn on his equity?

   A. 5.26%
   B. 7.84%
   C. 10.50%
   D. 16.0%

2. A soybean producer decides to store his soybeans in the local elevator for 6 months. The price at harvest is $6.00 per bushel and the elevator charges 2.5 cents per bushel per month for storage. He has 5,000 bushels to sell and must borrow $30,000 at 10% annual interest while he stores the soybeans. What price must he receive for his soybeans to break even and cover his storage and opportunity costs?

   A. $6.15
   8. $6.30
   C. $6.45
   D. $6.75

3. You are having a good business year and it looks as if taxable income is going to be higher than last year. Which of the following steps would be the best tax management before the end of the tax year if you are using cash accounting?

   A. Buy $20,000 of feeder steers.
   B. Postpone buying the $45,000 tractor until next year.
   C. Buy $15,000 worth of fertilizer for the next crop year.
   D. Sell 5,000 bushels of com right now.

4. A farmer who buys feeder pigs could use the options market to reduce his price risk by:

   A. buying a hog Put option.
   B. selling a hog Put option.
   C. buying a hog Call option.
   D. selling a hog Call option.

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5. The demand for food is usually considered an inelastic demand, This implies for a given percentage change in price:

   A. there is a smaller percentage change in quantity demanded.
   B. there is a larger percentage change in quantity demanded.
   C. there is a larger percentage change in quantity supplied.
   D. there is a smaller percentage change in quantity supplied.

6. A farmer has total assets of $500,000 which includes land with a market value of $300,000. The farmer's debt:equity ratio is 1.0. What will the farmer's debt:equity ratio be if the land was devalued by 30%?

   A. 0.61
   B. 0.64
   C. 1.56
   D. 1.64

7. A farmer rents a neighboring 100 acres of cropland for $40 per acre to operate with the existing 400 acres and equipment. The effect on the farmer's costs will be:

   A. to increase fixed costs per acre.
   B. to decrease fixed costs per acre.
   C. to increase variable costs per acre.
   D. to decrease variable costs per acre.

8. Com has an expected yield of 90 bushels per acre and has a production cost of $140 per acre. Current market prices are $2.50 per bushel for com and $6.00 per bushel for soybeans. Soybeans can be raised at a production cost of$120 per acre. At what break-even yield per acre would soybeans generate the same net return per acre as com?

   A. 25.6 bushels
   B. 29.1 bushels
   C. 34.2 bushels
   D. 38.7 bushels

9. A farmer is considering purchasing a harvesting machine. Annual machine ownership costs will be 20% of the purchase price. The annual operating costs will be $9,000 per year. The machine will increase income by $3,000 per year due to increased harvested yields though better timeliness and save $10,000 in custom combining costs. What is the maximum ($'s) the farmer can pay for the combine and increase annual profit?

   A. $5,999
   B. $49,999
   C. $19,999
   D. $10,999

10. Inflation means:

    A. a dollar will buy more in the future than it will buy today.
    B. the interest rate will equal the inflation rate.
    C. the farmer's profit margin will increase over time due to higher prices.
    D. the purchasing power of a dollar declines over time.

11. Which of the following is not a current asset?

    A. Non-breeding livestock
    B. Machinery
    C. Crop inventory
    D. Accounts receivable

12. Which of the following is a disadvantage of the partnership form of doing business?

    A. Initial capital is more easily obtained.
    B. There is access to additional skills.
    C. Operating capital is more easily obtained.
    D. There is unlimited liability to equity holders.

13. The objective of determining repayment capacity of a farm or ranch business should be:

    A. to determine the net return of land, labor and management for the business.
    8. to determine how much debt the business can safely handle.
    C. to determine the rate of return to the farmer's equity capital.
    D. to project the net worth of the business for the end of the year.

14. To maximize profits, a producer should produce at the output level where:

    A. marginal price equals marginal cost.
    B. marginal cost equals marginal revenue.
    C. average variable cost equals average total costs.
    D. marginal revenue equals marginal profit.

15. What form of business organization offers limited liability to all the owners of a farm business?

    A. Sole proprietorship
    B. General partnership
    C. Limited partnership
    D. Corporation

16. What value should you use on a cow-calf enterprise budget for the value of homegrown feeds, such as com or hay?

A. Cash invested in growing crops
B. Actual purchase cost of similar commercial feeds
C. Actual production costs of the homegrown feeds
D. Net selling price (opportunity cost) of the homegrown feeds

17. The price where consumers are willing to buy all that the producers are willing to supply to the market is called the:

A. opportunity price.
B. equilibrium price.
C. market price.
D. risk-free market price.

18. Which of the following is considered Schedule F Farm Income?

A. Cull breeding stock
B. Crop sales
C. Sale of farm equipment
D. Sale ofland

19. An agent entrusted with the execution of a futures contract transaction for a producer is called:

A. afarmer.
B. a runner.
C. a trader.
D. a broker.

20. Which of the following items will nm appear in a beginning or ending inventory?

A. a mortgage owed
B. money borrowed during the year
C. feeder pigs bought and sold during the year
D. tractor sold during the year

21. The best management tool for evaluating the change in profitability due to a change in the farm plan is:

A. the balance sheet.
B. the cash flow statement.
C. net present value.
D. the partial budget.

22. The producer of a commodity which has an elastic demand knows that:

A. if less is produced by the industry, total industry revenue will increase.
8. if more is produced by the industry, total industry revenue will increase.
C. if the price of the commodity increases, industry revenue will decrease.
D. price of the commodity has no effect on the total industry revenue.

Use the following information to answer questions 23-27 below:

Year	Present Value of a $1	Future Value of a $1	Present Value of Annuity
l	0.913	1.055	0.913
2	0.834	1.199	1.747
3	0.762	1.313	2.509
4	0.696	1.438	3.204
5	0.635	1.574	3.840
6	0.580	1.681	4.445

23. A vineyard will produce no income during the first year, $1,000 at the end of each year for the next 4 years and $2,000 at the end of the sixth year. What is the present value of this income?

A. $3,987
B. $4,087
C. $5,000
D. $6,000

24. A beef cow produces after-tax returns at the end of the year of $90/year for *S* years and can be sold for $500 at the end of the fifth year. How much could the producer afford to pay for the cow?

A. $345
B. $589
C. $663
D. $836

25. Using the same values for the beef cow ($90/year income and $500 salvage value) as in question #24, compute the current value of the cow with a three year life.

A. $305
B. $398
C. $413
D. $606

26. If the farmer expects interest rates to increase, but no increase in net returns, what impact is_this likely to have on the present value of the beef cow?

A. decrease the present value
8. increase the present value
C. would not change the present value
D. cannot tell

27. If the average tax rate is expected to increase over the next three years so that the cow no longer nets $90/year after taxes, what impact would this have on your answer to questions 25 and 26 above?

A. increases the value
B. decreases the value
C. no change in the value
D. cannot tell

28. A payment for real estate taxes for a fann is an example of a:

A. fixed non-cash cost.
8. variable cash cost.
C. variable non-cash cost.
D. fixed cash cost.

29. It is estimated that a parcel of farmland can typically earn a net return to the land of $60 per acre. Earnings on similar property sold recently have been about 5% of the sale value. Using this as a capitalization rate, the per acre value of this fann is about:

A. $300
B. $3,000
C. $1,500
D. $1,200

30. Signing a contract to sell a product at a set price:

A. reduces the risk of unfavorable price fluctuations.
B. guarantees a profit for the product.
C. reduces capital investment.
D. increases the change of high gross return.

31. A fanner purchases 500 pound feeder steers for $60 per cwt. and plans to sell the steers at 800 pounds. The fanner estimates the cost of gain to be $0.75 per pound. The nearest break-even price when the steers are sold at 800 pounds is:

A. $61/cwt.
8. $66/cwt.
C. $71/cwt.
D. $76/cwt.

32. A high leveraged business:

A. is less susceptible to business risk.
B. uses very little borrowed money.
C. is very susceptible to financial risk.
D. will not have a cash flow problem.

33. The total amount of a loan may he increased without increasing annual payments by:

A. raising the interest rate.
B. increasing the number of years of repayment.
C. reducing production costs.
D. buying more land.

34. The income that could be received by employing a resource in its best alternative use is called:

A. comparative advantage.
B. variable cost.
C. fixed cost.
D. opportunity cost.

35. The spread between local cash price and the price of the near term futures contract is called:

A. margin.
B. bid.
C. basis.
D. commission.

36. An enterprise budget is.

A. a record of past production perfonnance.
B. the tool used in analyzing a change in the farm operations and the potential change in net income.
C. a statement of expected costs and returns associated with a specific production activity.
D. not very useful for decision making.

37. The main goal of income tax management is to:

A. minimize before-tax income.
B. minimize total taxes paid.
C. maximize after-tax income.
D. maximize taxable income.

38. Which of the following has NO direct impact on the production costs of a certain product?

A. production methods
8. amount of input used
C. consumer demand
D. size of the operation

39. The universal problem of the world, regardless of the political system, is:

A. inefficient government.
8. high land costs.
C. scarcity.
D. consumer greed.

40. Agribusiness is a term used to include finns such as:

A. poultry farms.
8. grain farms.
C. cooperative marketing firms.
D. all of the above.

41. Farmer cooperatives are an integral part of agriculture and:

A. are patron-owned.
8. return savings in the form of patronage dividends.
C. operate at cost.
D. all of the above.

42. The time period which is long enough that the firm is able to vary the quantities of all of its resources is called the:

A. short run.
B. long run.
C. period of constant returns.
D. period of decreasing returns.

43. Decreasing opportunity costs means:

A. other people's opportunities are falling
B. the production possibilities curve is horizontal
C. the boundary is shifting between what is and what is not possible
D. less of one good has to be sacrificed to get greater amounts of another good

44. When we say a price in a competitive market is "above equilibrium," we mean that:

A. quantity supplied is greater than quantity demanded at that price
8. quantity supplied equals quantity demanded at that price
C. a shortage exists in the market
D. the government has instituted a price ceiling

45. Which of the following groups cannot borrow from the banks for cooperatives (Co8ank)?

A. associations of farmers or ranchers
8. associated harvesters or producers of aquatic products
C. federations of farm associations
D. an individual farmer or rancher

46. Price support programs establish a:

A. free market price
B. price ceiling
C. price above the free market equilibrium price
D. parity price

47. An agricultural producer who produced a commodity could hedge that commodity (such as com) by:

A. buying a call option
8. buying a put option
C. gambling in the futures market
D. speculating in the cash market

48. Over time, U.S. agriculture has shifted from human to animal to mechanical power because of:

A. improved animal, crop, and mechanical technology
B. higher paying jobs in the nonfarm economy
C. relatively cheap fuel prices
D. all of the above

49. The judicial process of administering estates of all descendants is known as a:

A. living trust.
B. last will and testament.
C. beneficiary.
D. probate.

50. A farmer is purchasing a new baler at a cost of$26,000. The dealer will finance the baler under the following terms: I0% down payment with the balance repaid in equal payments over the next five years at 9% APR. The farmer expects the baler to last for 9 years and have a salvage value of $1,000. How much interest will the farmer pay the first year of the loan?

A. $2,106
B. $2,340
C. $2,600
D. $4,680

51. Accrual accounting:

A. records income when received and expenditures when paid.
B. records income when earned and expenses when incurred.
C. does not require maintaining an inventory of assets.
D. is not recommended by accountants.

52. The book value of a piece of fann equipment would be the:

A. value of the item currently on the open market.
B. cost of an item plus the total depreciation to date.
C. cost of the item minus accumulated depreciation.
D. sentimental value of the item to the producer.

53. A lease between a landlord and a tenant is equitable if it:

A. divides returns equally between the landlord and the tenant.
B. is written by an attorney.
C. holds strictly to traditional lease rates in the area.
D. divides the income between the landlord and the tenant according to the contribution of each.

54. A business is "solvent" if:

A. total expenditures exceed total receipts.
B. total assets exceed total liabilities.
C. total sales exceed total liabilities.
D. total debt exceeds total equity.

55. The U.S. is a major exporter of feed grains and an importer of coffee, bananas, and pineapple. We could produce all of these commodities in the U.S. but choose to import them instead because:

A. international cartels prohibit the U.S. from producing imported crops.
B. each nation produces and exports goods for which it has a comparative advantage.
C. U.S. farmers do not know how to grow these crops.
D. the U.S. allows other nations to benefit from certain crops as part of our overall aid.

56. Which of the following is a fixed expense?

A. depreciation
B. cost of computer paper
C. interest on a short term loan
D. fuel for tractors

57. What type of insurance protects the farmer from lawsuits if he/she is responsible for personal injury or property damage to another person?

A. life insurance
B. property insurance
C. accident insurance
D. liability insurance

58. A constant payment loan with payments consisting of principal and interest is called:

A. an amortized loan.
B. a discounted loan.
C. a capital loan.
D. a fixed rate loan.

59. Which of the following types of lease arrangements is least risky for the landlord?

A. Crop share lease
B. Livestock share lease
C. Flexible rent lease
D. Cash lease

60. The usefulness of the current ratio is that it:

A. is a measure of the ability to meet immediate debts.
B. helps avoid excessive inventories.
C. helps estimate the ability of the finn to pay its debts from presently owned assets.
D. helps estimate the ability of the finn to meet interest costs and repayment schedules on land and machinery.

1998 Okmulgee Ag Econ Test
Answer Sheet

Name_Key _____Contest# School_____

1.	B	26.	A	51.	B
2.	C	27.	B	52.	C
3.	C	28.	p	53.	D
4.	A	29.	D	54.	B
5.	A	30.	A	55.	B
6.	C	31.	B	56.	A
7.	B	32.	C	57.	D
8.	C	33.	B	58.	A
9.	C	34.	D	59.	D
10.	D	35.	C	60.	A
11.	B	36.	C		
12.	D	37.	C		
13.	B	38.	C		
14.	B	39.	C		
15.	D	40.	D		
16.	D	41.	p		
17.	B	42.	B		
18.	B	43.	D		
19.	p	44.	A		
20.	C	45.	D		
21.	D	46.	C		
22.	B	47.	B		
23.	B	**48.**	D		
24.	C	49.	p		
25.	D	50.	A		

1997 Ag Econ Test
Answer Sheet

Name _____ Contest# School _____

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60. _____

Name _____

1997 Ag Econ Test

Select the most correct response for each question. Each response is worth S points for a total of 300 points.

1. A farmer has $150,000 of principal remaining on a mortgage at the end of this fiscal year. The aMual principal payment is $15,000. Accrued interest at the end of the year amounts to $8,500. The year-end balance sheet will show:
   A. non-current liabilities of$158,SOO.
   B. current liabilities of $158,500.
   C. non-current liabilities of $150,000 and current liabilities of $8,500.
   D. non-current liabilities of $135.000 and current liabilities of $23,500.

2. Dry land wheat presently yields 60 bushels per acre and the price is $3.00/bu. The price of canola is $.11 per pound. The cost of production is $160 per acre for wheat and $1SO per acre for canola. What yield would be needed from canola to give the same net returns as wheat?
   A. 1,255 pounds
   8. 1,545 pounds
   C. 1,600 pounds
   D. 1,635 pounds

3. A feedlot operator buys feeder steers, finishes them. and sells them. The operator estimates that finished steers will sell for $80 per cwt and that it will cost $250 per head to grow them from the 700 pound purchase weight to the 1100 pound selling weight. What is the highest price the operator can pay for 700 pound feeder steers to break even?
   A. $96.00/cwt
   B. $90.00/cwt
   C. $80.00/cwt
   D. $62.50/cwt

4. The judicial process of administering estates of all descendants is known as:
   A. living trust.
   B. last will and testament.
   C. beneficiary.
   D. probate.

5. The financial progress being made in a farm business from one year to the next year is best shown by:
   A. a change in total assets.
   8. a change in net worth statement.
   C. a change in liabilities.
   D. a cash basis income tax statement.

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6. A marketing function which tends to regulate the supply of a product and provide a stable market is:
   A. assembling.
   8. grading.
   C. processing.
   D. storing.

7. The type of life insurance which provides protection for a limited time and is usually cheaper per dollar of protection is called:
   A. whole !ife.
   8. term.
   C. endowment.
   D. new life.

8. The process of finding the present value of a dollar to be received in the future is known as:
   A. compounding.
   8. discounting.
   C. amortization.
   D. depreciation.

9. A feedlot operator purchases 100 feeders with an average weight of 750 pounds and sells them at an average of 1,050 pounds. Total feed costs is $18,000. Feed cost per pound of gain is?
   A. $0.514
   8. $0.600
   C. $0.720
   D. $0.810

10. A farmer is purchasing a new baler at a cost of $26,000. The dealer will finance the baler under the following terms: 10% down payment with the balance repaid in equal payments over the next five years at 9% APR. The farmer expects the baler to last for 9 years and have a salvage value of $1,000. How much interest will the farmer pay the first year of the loan?
   A. $2,106
   B. $2,340
   C. $2,600
   D. $4,680

11. When the size of the soybean harvest exceeds locally available farm and elevator storage, what happens to the basis?
   A. basis narrows
   B. basis widens
   C. basis goes out of existence
   D. basis is usually the same all year long

.'

12. You are considering the purchase of a combine, rather than continuing to hire a custom operator at $22.00 per acre. If you purchase the machine, the annual fixed costs (interest, depreciation, etc.) will be $t5,000. The variable cost is $IO per acre including the extra labor. There would be no other changes in costs and returns associated with ownership and savings other than the custom charges. How many acres must be harvested each year to justify (on a break even basis) purchasing the combine?
    A. 500
    B. 833.3
    C. 1,000
    D. 1,250

13. At the beginning of the year a farmer had a loan for $150,000. The interest charged on this debt is l0% APR. If the farmer makes a loan payment at the end of the year of $32,000, what would be the loan balance at the start of the new year?
    A. $118,000
    B. $133,000
    C. $135,000
    D. $142,000

14. Marginal revenue and marginal cost are useful in determining the profit maximizing output level. Profit will be at its maximum level when marginal revenue:
    A. is at its maximum level and marginal cost is equal to zero.
    B. is equal to zero and marginal cost is at its maximum.
    C. equals marginal cost and total returns are greater than total costs.
    D. is at its minimum and marginal cost is at its maximum.

15. Net farm income for a farm is $50,000. The charge for unpaid labor and management is $30,000. What is the farm's return to the owner's equity?
    A. $20,000
    B. (-$20,000)
    C. $0
    D. (-$30,000)

16. Which of the following is affected by the type of business organization a farmer chooses?
    A. amount of machinery owned
    B. production (crops and livestock) yields
    C. the value of the crops held in inventory
    D. transferability of ownership

17. If bacon and eggs are complementary in demand, an increase in the price of eggs is expected to cause:
    A. a decrease in the demand for bacon
    B. an increase in the demand for bacon
    C. no change in the demand for bacon
    D. a decrease in the supply of eggs

I8. What value should you use in a cow-calf enterprise budget for the value of homegrown feeds, such as corn or hay?

A. cash invested in growing crops
B. actual purchase cost of similar commercial feeds
C. actual production costs of the homegrown feeds
D. net selling price (opportunity cost) of the homegrown feeds

19. An advantage of making an estate the beneficiary of a life insurance policy is to:

A. reduce estate tax liabilities.
B. decrease the size of the estate.
C. provide insurance protection to heirs.
D. provide cash to satisfy any tax liability.

20. The total harvesting costs associated with a field of melons are $250 per acre. Total production costs incurred before harvest have been $300 per acre. Expected yield is 75 cwt (hundred weight) per acre. What is the minimum market price per cwt for melons necessary for the farmer to justify harvesting the crop?

A. $3.00 per cwt.
B. $3.33 per cwt.
C. $4.00 per cwt.
D. $7.33 per cwt.

21. You have borrowed $150,000 at a simple interest rate of?% per annum for 10 years. Principal is to be repaid in 10 equal installments at the end of each year, with annual interest payable with the principal payment. The total principal and interest payment due at the end of the third year would be:

A. $25,500
B. $23,400
C. $21,357
D. $24,600

22. A farmer who wants to have the right, but not the obligation, to sell a particular commodity at a specified price level would use a:

A. cash·forward contract.
B. basis contract.
C. call option.
D. put option

23. If you are considering a change in the farm business that will affect only a few items in your total farm budget, this change would appropriately be evaluated using a:

A. total farm budget
B. cash flow budget
C. depreciation schedule
D. partial budget

24. Accrual accounting:
    A. records income when received and expenditures when paid.
    B. records income when earned and expense when incurred.
    C. does not require maintaining an inventory of assets.
    D. is not recommended by accountants.

25. The present value of $100 that will be received at the end of I year, given a 5% interest (discount) rate is:
    A. $100.00
    B. $95.24
    C. $105.00
    D. $90.70

26. If a farmer writes a check for $8,000 to pay off the remainder of a tractor loan:
    A. assets are reduced and equity declines.
    B. liabilities are reduced and equity increases.
    C. assets and liabilities are reduced and equity is unaffected.
    D. assets, liabilities and equity each decline.

27. A demand curve shows the relationship between:
    A. output prices and quantity demanded by consumers.
    B. output prices and quantity supplied by producers.
    C. variable input used and output produced;
    D. quantity demanded and consumer tastes.

28. A farmer had a net farm income last year of $40,000. The farmer paid $10,000 for interest on borrowed capital during the year. Opportunity costs for unpaid family labor and management were $30,000. Equity in the business was $200,000. What was the percent return on equity?
    A.)0%
    B. 20%
    C. 5%
    D. 15%

29. A farmer borrowed $12,000 on March 1 to buy fertilizer for a sugarbeet crop. The farmer paid back the entire loan and 9% annual interest on December 1. What was the total amount of the principal and interest owed on December 1?
    A. $13,080
    B. $12,810
    C. $12,090
    D. $12,720

30. The book value of a piece of fann equipment would be the:
    A. value of the item currently on the open market.
    B. cost of an item plus the total depreciation to date.
    C. cost of the item minus accumulated depreciation.
    D. sentimental value of the item to the producer.

31. A farmer plants com this year on 98 acres. All specified costs are $196 per acre to grow the com. If com sells for $3.50 per bushel, how many bushels need to be produced to break even?
    A. 56 bu./acre
    B. 85 bu./acre
    C. 98 bu./acre
    D. 110 bu./acre

32. A farmer has total assets of$500,000 which includes a market value of $300,000 on land. The farmer's debt to equity ratio is 1.0:1. The lender values the land at book value which is 10% less than market value. What is the farmer's debt to equity ratio at book value?
    A. 0.88:1
    B. 1.12:l
    C. 1.14:l
    D. 1.27:1

33. The specified price at which the option purchaser may buy or sell the commodity is the:
    A. strike price.
    B. call price.
    C. put price.
    D. option price.

34. Solvency has been achieved when a farmer has:
    A. sufficient current assets to cover current debts.
    B. sufficient equity to cover current debts.
    C. sufficient assets to cover all debts.
    D. a positive cash flow.

35. Net worth is a measure of:
    A. managerial ability
    B. financial position
    C. profitability
    D. liquidity

36. An increase in the demand for beef with no charge in beef production will:
    A. decrease the price for beef and increase demand for feed.
    B. decrease the prices for pork and poultry.
    C. increase the price of beef.
    D. reduce beef prices and increase pork prices.

37. A statement showing receipts, expenses and net returns on a farm for a year is called a(an):
    A. net worth statement.
    B. cash flow statement.
    C. enterprise budget.
    D. income statement.

38. A lease between a landlord and a tenant is equitable if it:
    A. divides returns equally between the landlord and the tenant.
    B. is written by an attorney.
    C. holds strictly to traditional lease rates in the area.
    D. divides the income between the landlord and the tenant according to the contribution of each.

39. One of the best measures of financial progress over a period of years is:
    A. change in net worth.
    B. capital investments.
    C. income tax paid.
    D. net cash income.

40. The type of business that would distribute patronage refunds is a(an):
    A. individual proprietorship.
    B. partnership.
    C. corporation.
    D. cooperative.

41. Which of the following is considered to be a fixed cost?
    A. hired seasonal labor.
    B. depreciation on machinery.
    C. machinery repairs.
    D. feed purchases.

42. The price at which consumers are willing to buy all that the producers are willing to supply to the market is called the:
    A. opportunity price.
    B. equilibrium price.
    C. support price.
    D. risk-free market price.

43. A farmer sold culled breeding stock in 1995 for $72,530 with a basis of $36,974. How much of the gain is subject to taxes on the farmer's 1995 tax return.
    A. Breeding stock is a capital item and sales of capital items are not taxed.
    B. $72,530 is subject to income tax.
    C. $36,974 is subject to self-employment taxes.
    D. $35,556 is subject to income tax only.

Use the following information from Cowboy Bob's balance sheet to answer questions 44 to 60.

Current Assets		**Current Liabilities**	
Cash on hand	$9,000	Interest due this year	$11,000
Stocker cattle	$50,000	Loan on stocker cattle	$40,000
Grain in storage	$15,000	Operating Loan	$25,000
Long Term Assets		**Long Term Liabilities**	
Land/Buildings	$225,000	Land Mortgage	$125,000
Machinery	$60,000		
		Owner Equity	

44. Bob has total assets of
    A. $74,000
    B. $76,000
    C. $201,000
    D. $359,000

4S. Bob has total liabilities of:
    A. $76,000
    8 . $158,000
    C. $201,000
    D. $359,000

46. Bob has a current ratio of:
    A. 0.97
    B. 1.00
    C. 1.03
    D. 1.27

47. Bob's net worth (owner equity) is:
    A. $74,000
    B. $158,000
    C. $201,000
    D. $359,000

48. Bob's debt: equity ratio is:
    A. 0.79
    8. 0.97
    C. 1.27
    D. 1.79

49. Bob's debt:asset ratio is:
    A. 0.56
    8. 0.79
    C. 1.27
    D. 1.79

50. At the present time, Bob's financial situation can be best described as:
    A. liquid and solvent.
    8. liquid but not solvent.
    C. solvent but not liquid.
    D. neither liquid nor solvent.

Bob wants to do **less** crop fanning and more cattle production. He intends to sell his grain in storage and $40,000 of machinery and use the money to pay off his operating loan and buy $30,000 of breeding animals. Answer true (T) or false (F) for each of the following statements about the impacts these actions would have on Bob's balance sheet.

51. Current assets would increase.

52. Current liabilities would decrease.

53. Long tenn assets would decrease.

54. Long tenn liabilities would decrease.

55. Total assets would increase.

56. Total liabilities would decrease.

57. Net worth (owner equity) would increase.

58. Bob's debt:asset ratio would increase

59. Bob's debt:equity ratio would increase.

60. Bob's current ratio would increase.

1997 **Ag Econ Test**
Answer Sheet

Name_____ Contest# School_____

1.	D	26.	C	51.	F
2.	B	27.	A	52.	I
3.	B	**28.**	C	53.	I
4.	P	29.	B	54.	F
5.	B	30.	C	*55.*	F
6.	D	31.	A	*56.*	I
7.	B	32.	C	57.	F
8.	B	33.	A	58.	F
9.	B	34.	C	59.	F
10.	A	35.	B	60.	I
11.	B	36.	C		
12.	P	37.	D		
13.	B	38.	D		
14.	C	39.	A		
15.	A	40.	D		
16.	P	41.	B		
17.	A	42.	B		
18.	D	43.	D		
19.	P	44.	D		
20.	B	45.	C		
21.	B	46.	A		
22.	P	47.	B		
23.	P	**48.**	C		
24.	B	49.	A		
25.	B	50.	C		

1996 Ag Econ Contest -- Part 2

Select the most correct answer for each question. Question 1-41, 44, and 45 are worth *S* points each. Each part of Questions 42, 43, and 46 is worth 3 points.

I. A fanner is able to produce 70 bushels of oats per acre with the application 100# commercial fertilizer per acre. By varying only one factor of production. in this case the amount of fertilizer applied, he can receive a yield increase of 12 bushels per acre with the next I00# of commercial fertilizer. The next I00# increase in fertilizer would result in an additional yield of 2 bushels per acre. If oats sell for Sl.20 per bushel end the fertilizer costs $8.00 per hundred. how much fertilizer should be applied to maximize his net income?

A. 100#
•••a. 200#
C. 300#
D. 400#

2. Which one of the following would tend to reduce risk for the manager of a fann business?

A. Selecting the crop with the highest net return.
B. Speculating on the futures market.
•••C. Diversifying into several enterprises.
D. Specializing in a single enterprise.

3. If en acre of lend will net $80 growing com, $110 growing soy beans, $90 growing alfalfa. and $70 growing wheat, the opportunity cost of growing wheat is:

A. $80
... 8. $110
C. $90
D. $40

4. The increase in wheat yield becomes smaller for each additional IO pounds of nitrogen fertilizer applied after 30 pounds per acre have been applied. This is an example of:

A. Increasing marginal returns.
B. Unprofitable use of fertilizer.
•••C. Diminishing marginal returns.
D. Elasticity.

· S. On April t, Karen borrowed $8,000 to plant com. On November 1, she repaid the $8,000 along with $495 interest. What annual interest rate did she pay?

A. 6.187%
B. 9.281%
••• C. 10.607%
D. 12.375%

6. A fanncr is considering purchasing a harvesting machine. Annual machine ownership costs will be 20% of the purchase price. The annual operating costs will be $9,000 per year. The machine will increase income by $3,000 per year due to increased harvested yields through better timeliness and save $10,000 in custom combining costs. What is the maximum **(S's)** the fanncr can pay for the combine and increase annual profit?

A. $5,999
B. $49,999
... C. $19,999
D. $10,999

7. The cost of using a resource based on what it could have earned in the next best alternative is:

••• A. *An* opportunity cost.
B. Always a variable cost.
C. Always a fixed cost.
D. Never a consideration in enterprise analysis.

8. The average total cost of producing units of output can be found by:

A. Setting marginal revenue equal to marginal cost.
B. Dividing total fixed cost by the amount of output produced.
C. Dividing total variable cost by the amount of output produced.
••• 0. Dividing total cost by the amount of output produced.

9. A farmer wants to evaluate if he should rent additional hay acreage to replace purchase hay for his dairy herd. Which of the following items would not be considered in a partial budget?

A. Rent paid and hay production costs.
B. Current hay purchase price.
• • • C. Current milk production and price.
D. Machinery and labor availability and requirements.

I0. A fanner wants to project the returns per acre from producing com on his fann. The best method to detennine would be to use:

A. A cash flow statement.
••• 8 . An enterprise budget.
C. An income statement.
D. A total budget.

I1. The supply curve shows the rel tionship between:

A. Physical inputs of resources and the resulting units of output.
8. Total business receipts and quantity supplied.
C. Production costs and the amount demanded.
••• D. Price and the quantity supplied.

12 . The demand curve shows the relationship between:

A. Consumer tastes and the quantity demanded.
•• • B. Price and the quantity demanded.
C. Price and production costs.
D. Money income and quantity demanded.

13. The higher the price of strawberries, other things being equal, the quantity consumed:

A. Will increase.
*** 8. Will decrease.
C. Will not change.
D. Cannot be predicted from infonnation given.

14. If the government were to set the price of milk at an artificially high price, what is likely to occur?

••• A. A surplus.
8. A monopoly.
C. A shortage.
D. Aslump.

IS. A farmer plans on buying 20 tons of soybean meal in May of next year. The meal will be fed to the dauy herd throughout the year. It is now August and the farmer expects the price of soybean meal to increase significantly by next May. What should the fanner do to provide protection from the increasing price of soybean meal?

A. Buy August soybean meal futures contracts.
8. Sell May soybean meal futures contracts today, expecting to buy them back in August.
C. Sell August soybean meal futures contracts today, expecting to buy them back in April.
• 0 D. Buy May soybean meal futures contracts today, expecting to sell them in·May.

16. In developing an enterprise budget the farmer's own labor should be:

A. Included in the income section.
••• B. Included in the expense section.
C. Subtracted from the gross profit.
D. Excluded in the budget.

17. One of the best measures of financial progress over a period of years would be:

A. Income tax paid.
B. Capital investment.
C. Net cash income.
••• D. Change in net worth.

18. A highly leveraged business:

A. Is less SU.'iceptible to business risks.
8. Can borrow money easier.
••• C. Is more susceptible to business risks.
D. Uses very little borrowed money.

19. One advantage of a fann business structured as a corporation is:

A. Limited capital required to form a profitable business.
8. Simplification and ease of management.
C. Exempt from Federal income tax.
••• D. Avoidance of personal liability.

20. Which of the following is the best measure for comparing the profitability of two fanns?

A. Debt:asset ratio.
••• 8. Rate of return to equity capital.
C. Gross fann income.
D. Gross fann income minus capital gains.

21. Up to harvest time a farmer has spent $27 per acre for fertilizer. fuel. seed, and hired labor on his barley. Because of hail damage, he now expects a yield of 8 bushels per acre. The farmer had not taken out hail insurance. If the expected price of barley is $2.50 per bushel, what is his best alternative?

A. Assume the $27 per acre Joss for the barley and plow up the barley.
••• B. Harvest the barley assuming a $t4 per acre harvesting cost.
C. Sell the standing barley as pasture for $4 per acre.
D. Sell the standing barley as hay.for $5 per acre.

22. If consumers buy more beef because beef prices have decreased, and nothing else affects the market, there has been:

A. Ail increase in demand for beef.
B. A decrease in demand for beef.
... C. No change in demand for beef.
D. A decrease in the supply of beef.

23. Frank Perdue raises 2.000.000 broilers annually. In addition, Frank Perdue owns the feed mill, which provides feed for the birds, owns the processing facility. and markets the dressed birds to retail grocery stores. This type of business structure is known as:

A. Horizontal integration.
B. Marketing cooperative.
••• C. Vertical integration.
D. Supply cooperative.

24. A farmer purchases a tractor for $35,000 which has an expected life of J2 years and an expected salvage value oUJ,500. The tractor is financed by the dealer at an annual interest rate of 12 percent. What is the annual depreciation cost of the tractor using the straight line method.

A. $4,200
B. $3,500
C. $2,917
••• D. $2,625

Questions 25 to 30 use the following information.

The balance sheet for Happy Acres Farm includes the following infonnation:

Feeder cattle ready for sale	$25,000
A unts Payable	$3,500
Cash on hand	$2,000
Grain in storage	$18,000
Loan payments due this year	$32,000
Land Mortgage (not due this year)	$127,000
Machinery	$46,000
Land	$320,000

25. What are the total cum:nt assets for Happy Acres Farm?

A. $2,000
B. $25,000
••• C. $45,000
D. $46,000

26. What are the total current liabilities for Happy Acres Fann?

A. $3,500
••• B. $35,500
C. $45,000
D. $127,000

27. What are the total assets for Happy Acres Fann?

A. $127,000
8. $320,000
C. $366,000
••• D. $411,000

28. What are the total liabilities for Happy Acres Farm?

A. $35,500
8. $127,000
**''' C. $162,500
D. $411,000

29. Suppose all the feeder cattle on Happy Acres Farm unexpectedly die. Which of the following statements is true?

A. There will be sufficient remaining current assets to pay current liabilities.
••• B. There will not be sufficient remaining cUJTent assets to pay current liabilities.
C. Death of the cattle would have no effect on current assets.
D. Net worth would increase.

30 Suppose that Happy Acres Fann purchases $1S,000 of breeding livestock using their cash on hand and financing the remaining $13,000 on a three year note. Which of the following statements is lnle?

A. Current assets would decrease.
B. Total liabilities would increase.
C. Net worth would not change.
••• D. A, B, and C, are all true.

Questions 31 to 34 use the foilowing crop yield information

	Illinois	Oklahoma
	Bushels per acre	
Com	17S	10S
Wheat	*SO*	30

31. What is the maximum combined amount of com that can be produced with 2 Illinois acres and 2 Oklahoma acres?

A. 210 bushels
B. 280 bushels
C. 350 bushels
••• D. 560 bushels

32. What is the maximum combined amount of wheat that can be produced on 2 lllinois acres and 2 Oklahoma acres?

A. 60 bushels
B. 80 bushels
C. I00 bushels
••• D. 160 bushels

33. If at least 2 acres of wheat must be produced, which cropping allocation wilt produce the maximum combined amount of wheat and com?

••• A. 2 acres of Illinois com and 2 acres of Oklahoma wheat.
8 . 2 acres of Oklahoma corn and 2 acres of Illinois wheat.
C. I acre of com and wheat in both Illinois and Oklahoma
0. 2 acres of wheal in both Illinois and Oklahoma

34. Given this yield information, which of the following statements is true about crop production in Illinois and Oklahoma?

A. Illinois has a competitive advantage in both corn and wheat production.
•• • B. Oklahoma has a competitive **advantage** in wheat production.
C. Oklahoma has a competitive advantage in both com and wheat production.
D. Neither wheat nor com should be grown in Oklahoma

35. Current Assets are:

A. Assets you currently own.
B. Assets fmenced by loans which are being **repaid** on schedule.
••• C. Assets which can be converted to cash through nonnal operations in the business year.
D. Assets with a market value in excess of book value.

36. Which asset on the balance sheet has the most liquidity?

A. Inventory
8. Accowtts payable
••• C. Ca.<ih
D. Accowtts receivable

37. Return to management is net cash farm income:

A. Minus debt payments.
... 8. Minus the value of unpaid labor, depreciation, interest on equity capital, and net inventory changes.
C. Minus the value of operator's labor and interest on debt payments.
D. Minus the interest on equity capital, depreciation, and adjustments for inventory changes.

38. Which of the following is a disadvantage of the partn hip form of doing business?

A. Initial capital ismore easily obtained.
B. There is access to additional skills.
C. Operating capital is more easily obtained.
••• D. There is unlimited liability to equity holders.

39. Which of the following is considered Schedule F Farm Income?

A. Cull breeding stock.
••• B. Crop sales.
C. Sale of fann equipment.
D. Sale ofland.

40. What value should you use on a cow-calf enteiprise budget for the value of homegrown feeds, such as com or hay?

A. Cash invested in growing crops.
B. Actual purchase cost of similar commercial feeds.
C. Actual production costs of the homegrown feeds.
••• D. Net selling price (opportunity cost) of the homegrown feeds.

4I. Inflation means:

A. A dollar will buy more in the future than it will buy today.
B. The prices at which the interest rate will equal the inflation rate.
C. The fanner's profit margin will increase over time due to higher prices.
••• D. The purchasing power of a dollar declines over time.

42. Each answer in this section is worth 3 points for a total of 39 points.

Tom **Tillage is** considering switching from wheat to barley production this year. The following are his estimates of costs and revenues for each crop.

	Wheat	Barley
	Cost ($/acre)	
Tillage	11	14
Seeding	8	6
Fertilizer	30	32
Spray	9	II
Harvest	1S	17
Revenue ($/acre)		
Grain Sales	110	12S

Tom wants to use partial budgeting to decide whether to switch from wheat to barley production. For each of the wheat and barley budget items indicate whether they should be entered in the partial budget es an added cost (AC), a reduced revenue (RR), a reduced cost (RC), or an added revenue (AR). Circle the appropriate response.

Wbeatbudact

	Costs	Circle one in each row			
I.	Tillage	AC	RR		AR
2.	Seeding	AC	RR		AR
3.	Fertilizer	AC	RR		AR
4.	Spray	AC	RR		AR
5.	Harvest	AC	RR	RC	AR
	Revenue				
6.	Wheat Sales	AC	BR	RC	AR

Barley budget

	Costs				
7.	Tillage	AC	RR	RC	AR
8.	Seeding	AC	RR	RC	AR
9.	Fertilizer		RR	RC	AR
10.	Spray		RR	RC	AR
11.	Harvest	AC	RR	RC	AR
	Revenue				
12.	Berley Sales	AC	RR	RC	A&

13. The partial budget confinns that Tom should:

A. grow wheat

*** B. grow barley.

Questions 43 to *4S* use the following infonnation fi:om Fred Fanner's balance sheet.

Current Assets $3S,000	
Non-Current Assets	$487,000
CWTCnt Liabilities	$52,000
Non-Current Liabilities	$342,000

43. Match the following items with the most conect response (3 points each).

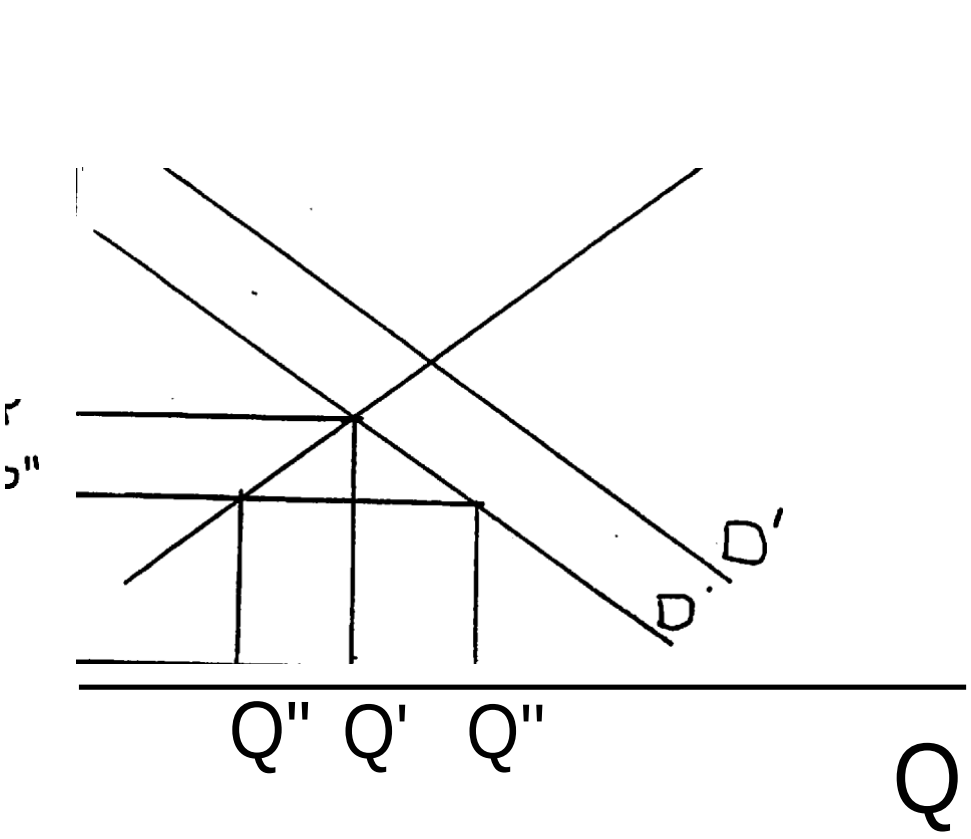
_ O_ 1. Total Assets	A $487,000
_F _ 2. Net Worth	B. 0.75S:I
_H_ 3. Current Ratio	C.$342,000
_E_ 4. Total Liabilities	D. 1.486:1
_**B**_ *S.* Dcbt:Assct Ratio	E. $394,000
_J_ 6. Net Fann Income equal to an 8 Percent Return on Assets	F. $128,000
	0. $522,000
	H. 0.673:1
	J. $41,760

44. Fred's financial condition is best described as:

A. Liquid and solvent
B. Not liquid and not solvent
· C. Liquid but not solvent.
••• D. Not liquid but solvent.

45. If Fred sells $20,000 of machinery and puts the cash in his ch king account, the result would be:

A. *An.* increase in liquidity and owner equity.
••• B. An increase in liquidity and no change in owner equity.
C. An increase in liquidity but a decrease in owner equity.
D. An increase in liquidity but a decrease in solvency.



46. Use the graph above to match the following to the best response (3 points each).

_E_ I.P'
_G_ 2.DorD'
_D_ 3. Q' to Q" on D
_H_ 4.0to0'
_C_ 5.Q'
_B_ 6. Q"· Q'"
_F_ 7.S
_A_ 8. Q'" to Q' on S

A. Change in quantitysupplied
B. Shortage caused by price ceiling at P..
C. Equilibriwn quantity
0. Change in quantity demanded
E. Equilibrimn price
F. Supply curve
G. Demand cw-ve
H. Change in demand

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Evaluating Financial Performance and Position

OSU EXTENSION FACTS

Oklahoma CooperaUve Extension **Service** • Division of Agricultural Sciences and Natural Resources

F-790

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Measures of financial performance reduce a large amount of Information into a convenient form for analysis. No single measure of linancial performance is adequate for evaluating a farm business. Evaluation of several financial measures may be more useful in directing the manager to ask the right questions than In providing solutions to the financial problems of the business. Both the magnitude of the measure and Its relationship to other measures should be evaluated.

Decisions made in developing the balance sheet, cash flow statement, and income statement **have** important impacts on the financial measures discussed in this OSU Fact Sheet. Some of those decisions include using cost or market values In preparing the balance sheet; determining a specific value for each asset and liability on the balance sheet; including or excluding accrued expenses, deferred taxes, and personal assets and liabilities from the balance sheet; estimating net income on a cash, accrual, or accrual adjusted basis; and deciding if Income should be before or after taxes. Each of these decisions affects key relationships in the financial statements and Impacts the financial measures used to evaluate financial performance and position.

The overall performance and position of the business should be evaluated based on a set of criteria which includes liquidity, solvency, profitability, financial efficiency, and repayment capacity. Each of these criteria measures a different aspect of financial performance and/or position.

Liquidity indicates the ability of the business to meat financial obligations when they come due. Timely payment of the obligations of the business, Including principal and interest on debt without disrupting the normal operation. is an indication the business is liquid.

Solvency measures Iha ability of the firm to pay all debts if the assets of the business are sold. Generally, if the market value of total assets exceeds existing debt obligations against those assets, the business is solvent.

Profitability is an indication of the level of income produced by the farm business and is measured in terms of rates of return produced by the labor, management, and capital of the business.

Financial efficiency measures the degree of efficiency with which labor, management, and capital **are used in the business.** Efficiency indicates the relationship **between** inputs and outputs and can be measured in physical or financial terms.

Repayment capacity **measures** the **ability** of the business to repay existing debt commitments from farm and non-farm income, and is closely related to the concept of liquidity.

Each of these criteria plays an important role in the analysis of financial performance and position of a business, and each has alternative measures which are discussed in this OSU Fact Sheet.

Measuring Liquidity

Liquidity is the ability to generate cash lo meet cash demands as they occur during the year, and to provide for unanticipated events. Cash is needed to pay for the usual expenses of the business, including operating expenses, capital items. and scheduled debt payments, and provide for personal transactions, such as family living expenses. Unanticipated events, such as adverse weather or price conditions, which produce economic losses, or new investment opportunities. may make it difficult to meet cash demands.

Current Ratio

The two balance sheet measures most often used to evaluate liquidity are the current ratio and working capital. The current ratio is used to evaluate liquidity through the relationship between current farm **assets** and current farm liabilities. However, the current ratio is a **relative** measure rather than an absolute dollar measure It is calculated as follows:

Total current farm assets + Total current farm liabilities

Current farm **assets** normally include cash, marketable securities, accounts receivable, and inventories. Current farm liabilities include accounts and short-term notes payable, interest and principal payments on long-term debt. accrued income taxes, and other accrued expenses. The ratio Indicates the extent to which current farm assets, if liquidated, would cover current farm liabilities. If the ratio is greater than 1.0, Iha farm is considered liquid. The higher the ratio, the greater the liquidity. If less than 1.0, the farm is considered not liquid, indicating soma degree of cash flow risk. A more careful evaluation of the cash flow statement would be appropriate, given this indication of a possible liquidity problem.

Based on data from the London's market-based balance sheet which includes deferred taxes, the current ratio as of February 1 is:

$$161{,}777 + 162{,}431 = 0.996 = 1.0$$

Including deferred taxes is a conservative approach to calculating the current ratio; however, it recognizes that if all current farm assets are sold during the next year, the deferred taxes would be owed. It is better for the producer and lender to be aware of the contingent llablllty and to determine its potential Impact, than to ignore the tax implications of selling assets. Generally, lenders and analysts like to see a current ratio of 1.5 to2.0, whenusing themarket value approach, exdudlngdeferred taxes. Thus, while theLondon operationIsllquld, thecurrent ratio of 1.0 Is a litUe lower than desired by lenders In an evaluation of short-term or operating credit needs. If deferred taxes were excluded in calculating the London's current farm liabilities, the current ratio would be 1.2. The current ratio may register higher and lower, at different times during the year, for good reason.

The preferred current ratio varies by type of business. If the objective of the business Is to maximize profitability, a high current ratio might Indicate the business Is sacrificing Income by emphasizing low-yielding current assets, such as cash or **a** savings account.

Working capital is calculated by subtracting total current llabililles from current farm assets, and Is expressed as an absolute dollar amount. It Is the amount of cash left to purchase Inputs and inventory items if the business sold all current assets and **paid** all current liabilities. Generally, working capital should be positive, but the amount needed depends upon the type and size of business. Seasonal borrowing and repayment of credit lines or operating notes will cause the measure to fluctuate in value during the year. Because current farm liabilities include llablllties due wilhin the coming year, and some farms have relatively few current assets, operations generally can be maintained even with negative working capital. Nevertheless, negative working capital indicates a potential liquidity problem which should be subject to further evaluation.

Balance sheet measures of liquidity, such as working capital and current ratio, cannot totally evaluate the ability of a business lo meet cash commitments. To overcome the !Imitations associated with a liquidity measurement at a point in time, these ratios should be used with repayment capacity measures and the cash flow statement. This allows a more complete analysis of the liquidity position of the business.

Measuring Solvency

Solvency relates primarily to the firm's ability to meet long-term commitments as they come due. If the value of total farm assets exceeds total farm liabilities, the farm Is said to be solvent; if the sale of all assets would not generate sufficient cash to pay off all liabilities, the farm is insolvent. The difference between the value of total assets and total liabilities, generally referred to as net worth or owner's equity, is the most often used measure of solvency. Themostrealistic approach tocalculating owner equity is to use the market-based approach to value assets. including consideration of deferred taxes. Three ratios are used to measure financial solvency: the equity-to-asset ratio, the debt-to-asset ratio, and the debt-to-equity or leverage ratio.

Equity-to-Asset Ratio

The equity-to-asset ratio indicates the proportion of total farm assets owned or financed by the owner's equity capital. It is calculated by dividing total farm equity by total farm assets, as follows:

$$\text{Total farm equity} \div \text{Total farm assets} =$$

$$\frac{\text{(Total farm assets - Total farm liabilities)}}{\text{Total rarm assets}}$$

The higher the equity-to-asset ratio, the more capital supplied by the farm owner and the less supplied by the creditors. There is no exact standard for the equity-to-asset ratio which would apply to **every** farm business. However, as the percent equity increases **above** 50, the owner is supplying a greater percent of the total capital in the business than the creditors. With data from the London's balance sheet, estimated using the market-value approach and Including deferred taxes, the equity-to-asset ratio as of February 1 is:

$$(\$1{,}059{,}182 - \$373{,}552) \div \$1{,}059{,}182 =$$

$$\$685{,}630 \div \$1{,}059.182 = 0.65$$

With anequity-to-assetratio substantially **above** 50percent, theLondon's areinastrong equity position. Also, thisratio should increase over time If the owner retains farm profits and reduces debt obligations.

The equity-to-asset ratio is often converted to a percentage, by multiplying by 100, and referred to as the Percent Equity. Equity capital represents the owners' claims against the assets of the business. If the percent equity does not increase over lime, the farm profits may be too low or family living expenses and other non-farm withdrawals may be too high.

Debt-to-Asset Ratio

The debt-to-asset ratio measures the proportion of total farm assets owed to creditors. The higher the ratio, the greater the risk exposure for the business and those providing loan funds for the business and the less flexibility the operator has to respond to adverse natural or market phenomenon. The debt-to-asset ratio is calculated as follows:

$$\frac{\text{(Total current farm liabilities} + \text{Total non-current farm liabilities)}}{\text{(Total current farm assets} + \text{Total non-current farm assets)}}$$

$$= \text{Total farm liabilities} \div \text{Total farm assets}$$

With data from the London's balance sheet, estimated using the market-value approach and including deferred taxes, the debt-to-asset ratio as of February 1 is:

$$(\$162{,}431 \div 211.121) + (\$161{,}777 + \$897{,}405) =$$

$$\$373{,}552 \div \$1{,}059{,}182 = 0.35$$

Although there is no exact standard for every farm business, a debt-to-asset ratio greater than .50 indicates that less than 50 percent of the value of the farm's total assets is contributed by owners. Faced with this situation, the creditors are likely to be cautious in advancing additional funds. The London's debt-to-asset ratio of .35 indicates the creditors are contributing only about 35 percent of the farm assets.

High debt-to-asset ratios have been interpreted as an indication of "farm financial stress." In 1988, the U.S. Department of Agriculture indicated those farms with a debt-to-asset ratio between 40 and 70 percent were likely to experience a high level of financial stress, while those with debt-to-asset ratios above 70 percent were likely lo experience very high financial stress. Farms experiencing high financial stress may have to consider restructuring or refinancing debt. Farms experiencing very high financial stress may have to liquidate certain assets in order to improve their farm financial position. By these standards, the London's debt-to-asset ratio is below the farm financial stress level.

In comparisons between businesses, the debt-to-asset ratio is most meaningful when the market value approach is used lo value farm assets. When evaluating the performance of an individual business overtime, the cost approach to valuing assets may provide more meaningful esllmates of the debt-to-asset ratio. With lhe cost approach, the cost of farm assets will not be influenced by fluctuallons in market prtces that create annualized, but unrealized, capital gains or losses.

Debt-to-Equity Ratio

The debt-to-equity ratio is a third measure of solvency, and indicates the relative proportion of funds invested by creditors versus the farm owners. The higher the value of the debt-to-equity ratio, the more total capital supplied by the creditors relative to the farm owner. The debt-to-equity raUo is calculated by dividing total farm liabilitles by total farm equity, as follows:

$$\text{Total farm liabilities} \div \text{Total farm equity} = \frac{\text{Total farm liabilities}}{(\text{Total farm assets} - \text{Total farm liabilities})}$$

This rallo is also referred to as the leverage ratio. Leverage refers to Increasing the use of debt relative to equity as a means of financing the business. The higher the leverage ratio, the more total capital supplied by the creditors and the less by the farm owner. Lenders are particularly interested In this ratio because it shows the proportion of the rtsk they are taking in comparison to the owner. Many lenders prefer the debt-to-equity ratio to be less than 1.0, with requirements varying depending on whether the liabilities are secured by current, intermediate, or long-term assets. In general, the greater the loan risk and longer the loan terms, the lower the ratio desired by the lender.

Using data from the London's balance sheet, estimated using the market-value approach and including deferred taxes, the debt-to-equity ratio as of February 1 is:

$$\$373{,}552 \div \$685{,}630 = 0.54$$

The London's debt-to-equity ratio is substantially less than 1.0 and indicates that considerably more capital is being supplied by the owners than the creditors. With equity nearly twice as great as debt, the London's equity position would be viewed favorably by owner and lender.

Influence of Asset Valuation Method

All three ratios are influenced by the value placed on farm assets. Market value more accurately represents the realizable value owners can receive for their assets. However, deferred taxes that would result from the sale of assets should be considered as liabilities (both current and noncurrent) In developing the solvency ratios. Using current market value without considering deferred taxes might suggest more "comfort" than exists. Also, when only the market-value approach to valuing assets is used, those evaluating solvency ratios need to consider the source(s) of the owner equity and identify how much came from contributed capital, changes in asset values, and retained earnings. It is important over time for equity to be earned through the operation and success of the business rather than from appreciation in asset values.

Also, increasing the proportion of debt relative to equity in financing the business should not be viewed as necessarily good or bad without additional information regarding the profitability of the business. Increasing leverage can be either favorable or unfavorable, depending on the rate of return which the addltional debt can earn relative to the cost of the debt capital. If the business is profitable, the rate of return on the assets of the business is greater than the cost of capital. Increasing leverage increases equity and the rate of growth in equity. If the business in not profitable, increasing leverage reduces equity. Borrowing more money to expand a business increases financial risk and exposes the business to a greater negative impact from adverse outcomes.

Measuring Profitability

Profitability measures the financial performance of the farm over a period of time, usually one year, as a result of decisions regarding use of land, labor, capital. and management resources. The five measures used to assess profitability are net fann income, net farm income from operations, rate of return on farm assets, rate of return on farm equity, and operating profit margin ratio.

Net Farm Income from Operations

Net farm income from operations represents the return to unpaid operator and family labor and management, and the owner's equity capital from the normal operation of the business. Net farm Income from operations comes directly from the income statement. and is calculated by subtracting all farm operating expenses incurred to create those revenues, Including interest on debt, from gross farm revenue. Changes In the values of inventories and capital Items are reflected in net farm income from operations, but not the gain or loss resulting from the sale of farm capital items and marketable securities.

The calculation of net farm income from operations is influenced by the decisions regarding use of the market-value or cost approach to value farm assets. The London's net farm income from operations, calculated using the accrual adjustments approach with market values for assets, is $56,229.

Net farm income from operations Is a dollar amount and not a financial ratio. Thus, no one standard is appropriate for all farm operations or to make comparisons with other agricultural businesses. Net farm income from operations should be positive and sufficiently large to compensate the owner for utilizing his/her labor, management, and equity capital In the farming operation. Over time, profits should increase so funds can be allocated to farm capital replacement, non-farm expenses, and retained earnings.

Net Farm Income

Net farm income is net farm income from operations adjusted for the gain/loss resulting from the sale of farm capital Items and marketable securities. The London's net farm income, using the market-value approach, is $55,729. This net farm income figure includes a loss on sale of farm capital assets and marketable securities of $500. Again, since net farm Income is a dollar amount, it is difficult to establish a standard for comparison across farm operations.

Net farm income from operations and net farm income are generally calculated as "before-tax" amounts. The form of business organization can affect interpretation of this before-tax amount of income. A corporation, for example, will include payments for owner and family labor and management as expenses in calculating net farm income, and a sole proprietorship will usually not include these as expenses.

Rate of Return on Farm Assets (ROA)

The rate of return on farm assets (ROA) measures the relative Income generated by the assets of the farm business, and is often used as an overall index of profitability. The rate of return on farm assets is calculated as follows:

(Net farm income from operations
+Farm interest expense
- Value of unpaid operator and family tabor and management)
Average total farm assets

Once the Income statement has been developed, net farm income from operations and farm interest expense can be taken directly from the statement. The value of unpaid operator and family labor and management and the value of average total farm assets must be estimated. Because costs typically vary widely across farms, ROA Is most meaningful for comparisons between farm businesses when the market-value approach is used to value farm assets. When evaluating the performance of an individual farm business over time, meaningful comparisons can also be made if assets are valued using the cost approach. In either case, the higher the ROA, the more profitable the operation.

The rate of return on farm assets uses net farm income from operations in its calculation because ROA is calculated for the purpose of evaluating the profitability of the business that resulls from the normal, routine agricultural operallon. Including gains/losses resulting from the sale of capital assets !hat are not part of the normal operation could cause misleading results. Farm business interest expense is Included because ROA measures the return on all farm assets, those assets financed by creditors as well as by owner equity. In calculating net farm Income from operation, s the interest expense was subtracted from gross farm receipts. Now, the interest expense must be added back to net farm income from operations to calculate ROA.

For agricultural businesses that are Incorporated, or in which those Involved in the operation take a salary withdrawal, wages would have been paid to the operator and family members employed by the business. For agricultural businesses that are not Incorporated, a return to unpaid labor and management has not been subtracted as an expense. Because ROA measures the return lo only the assets, a charge must be made for unpaid operator and family labor and management. Thus, a value for unpaid operator and family labor and management is subtracted. In estimating the dollar return to assets, the operator could subtract a return for his/her labor and management valued at what they could earn in alternative employment. This return is often referred to as the "opportunity return to labor and management," and varies for different individuals depending on their opportunities for alternative employment. However, because this opportunity return does vary by individual, precise estimates of alternative earnings are difficult to obtain.

A proxy for unpaid operator and family labor and management is the amount of withdrawals from the business or the amount listed as family living expense. If withdrawals are used, consistency across firms may be a problem. For example, family housing costs may be included in the withdrawal figure for some agricultural businesses, but they may be part of the farm mortgage interest expense for other agricultural businesses. Also, the withdrawal figure is sometimes higher or lower than the market opportunity cost of these resources, and it is often difficult to determine the market opportunity cost. If possible, however, one should compare the amount of family living expense with the opportunity cost of the labor and management resources to assess the realism of family living expenses **as a** proxy for unpaid operator and family labor and management.

Finally, the ROA calculation is based on the average value of farm assets, rather than the beginning or ending asset values, because the return is generated for the entire year. Non-fann assets should be excluded from the calculation of ROA for the agricultural business. Because the return is to farm assets, the denominator of the equation should only include farm assets.

Calculating the rate of return on farm assets for Jack and Julie London, using the market-value approach to valuing assets, involves several steps:

Return to farm assets:

$ 56,229 Net farm income from operations
+28,180 Farm interest expense
-22,500 Opportunity return to labor and management
$61,909 Return to total farm assets

Average total farm assets equals (beginning total farm asset values + ending total farm asset values)+ 2. For the Londons, average total farm assets are:

$$\frac{\$1,059,182 + \$1,097,111}{2} =$$

$$\frac{\$2,156.293}{2} = \$1,078,146$$

The calculation of rate of return on farm assets using the market-value approach to valuing assets involves dividing the return to total farm assets by average total farm assets, as follows:

$61,909 +$1,078,146 = 0.057

or, multiplying by 100 to convert to a percentage,

= 5.7%

The rate of return on farm assets will vary by farm type, but the higher the ROA value, the more profitable the farming operation. ROA is often compared to the average interest rate on borrowed capital or to the cost of new borrowing. If the ROA exceeds the cost of borrowed capital, then the borrowed capital is being used profitably in the business and increasing leverage will contribute to additional firm growth. If, however, the ROA is less than the cost of borrowed capital, borrowed funds are not being used profitably and increasing debt will reduce growth In equity. So, the level of profitability is an important key to successful use of debt financing as a strategy to increase the equity of the business.

For the London's operation. the average interest rate on borrowed capital can be estimated as follows:

$$\frac{\text{Farm interest expenses}}{\text{Average total farm liabilities}} = \frac{\$28,180}{\$376,584} = 0.0748$$

where average total farm liabilities =

$$\frac{(\text{beginning total farm liabilities} + \text{ending total farm liabilities})}{2}$$

$$= \frac{(\$373,552 + \$379,617)}{2}$$

$$= \frac{\$753,169}{2}$$

= $376,584

For the London's operation, the rate of return on assets of 5.74 percent is less than the average interest rate on borrowed capital of 7.48 percent. It may also be less than the Interest rate charged on new borrowed capital. Expanding the operation using borrowed capital would not be considered a profitable alternative under these circumstances.

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Comparisons to rates-of-return on other investments or to other agricultural businesses should be on the same basis if the comparison is to be meaningful. Flnally, the rate-of-return on farm assets may seem low when compared to non-farm investments such as stocks and bonds. In making comparisons, remember that realized and unrealized capital gains are not included In the return to farm assets. Also, the method used to value farm assets has a significant effect on ROA. If agricultural real estate Is valued at a cost of $300 per acre versus a current market value of $1,500 per acre, the ratio will considerably differ.

Profitability also is important when evaluallng any new business investment. Rather than considering overall level of profitability, however, the decision maker should compare the rate-of-return on the specific investment alternative with the cost of capital needed to finance the investment.

Rate of Return on Fann Equity (ROE)

Another measure of farm profitability Is the rate of rel\Jm on farm equity (ROE). It is calculated as follows:

Net farm income from operations
- Value of unpaid operator and famfly labor, and management
Average total farm equity

Net farm income from operations can directly be taken from the completed income statement, while the value of unpaid operator and family labor, management, and average total farm equity must be estimated. The earlier discussion of issues surrounding estimation of the value of unpaid operator and family labor, and management is still appropriate. Average total farm equity is used since profitability is being measured for the year, rather than at the beginning or end of the year. The rate of return on equity (ROE) measures the rate of return on only the owner's equity capital that is employed in the farm business, rather than on both owned and borrowed capital as In the calculation of ROA. Thus, in calculating ROE, the interest expense is not added back into the numerator as it was in the calculation of ROA.

As with ROA, use of the market-value approach to valuing assets is recommended when comparing profitability across individual farms, while the cost approach is recommended for making comparisons of an individual's business performance over time.

Calculating **the rate** of return on farm equity **for the** London's operation involves estimating the return to farm equity and dividing it by average farm equity. The return to farm equity using the market-value approach to valuing assets. including deferred taxes, is calculated as follows:

$56,229	Net farm income from operations
- 22,500	Value of unpaid operator and family labor, and management
$33,729	Return to farm equity

Average farm equity using the market-value approach to valuing **assets is** calculated as follows:

$ 685,630	Beginning total farm equity
+ 717,494	Ending total farm equity
$ 1.403,124	

$1,403,124 + **2** :: $701,562

The rate of return on equity for the London's operation is as follows:

$33,729 + $701,562 = 0.0481, or 4.81%

In general, the higher the value of ROE, the more profitable be compared to alternative rates of return which could be earned by the funds currently invested in the farm. If the farm equity capital was employed in some non-farm alternative, such as certificates of deposit at the local bank, the expected rate of return would approximate current rates on bank CDs. If the ROE from farming is less than this opportunity rate of return on equity capital, the profitability of farming might be considered low. Nationally, estimates of ROE for agriculture are typically between two and four percent, but have been as high as 9 percent (1973) and even slightly negative (1983-84). While the national average may be relallvely low, ROE on individual fanns can vary widely.

Some caution must be exercised in interpreting the rate of return on equity. A high rate, nonnally associated with a profitable agricullural business, may also Indicate a relatively small capital base or a highly-leveraged agricultural business. A low rate of return on equity, which normally Indicates a relatively unprofitable farm business, may also indicate a more conservative, high-equity agricultural business. So. this measure, like many others, should be used in conjunction with other measures when analyzing an agricultural business.

Operating Profit Margin Ratio

The final profitability measure is the operating profit margin ratio. which measures the return lo capital per dollar of gross farm revenue (or per dollar of value off arm production). The operating profit margin ratio is calculated as follows:

(Net farm income from operations
+ Farm Interest expense
Value of unpaid operator and family labor,
and management)
Gross farm revenue or value of farm production

The numerator for the operating profit margin ratio is the same as for the rate of retum on assets. The basis for the calculation Is net farm income from operations. Farm interest expense, which was subtracted in estimating net farm income from operations, is added back into the numerator. This action focuses attention on operating efficiency in order to compare performance between businesses without considering the impact of different levels of debt. It is important to use accrual-adjusted income measures in calculating this ratio. Finally, an estimate of the value of unpaid operator and family labor and management is subtracted to get the operating profit margin.

The operating profit margin ratio can be calculated by dividing the operating profit margin by either gross farm revenue or the value of farm production. The value of farm production is calculated by subtracting from gross farm revenue the amount of purchased feed and purchased livestock held for resale (feeding livestock). Thus, the difference in the operating profit margin based on the two different calculations will depend on the amount of purchased feed and livestock held for resale in the business.

The operating profit margin for the London's is calculated, using the market-value approach to valuing assets. as net farm income from operations ($56,229) + farm interest expense ($28,180)-value of unpaid operator and family labor and management ($22,500) = $61,909. The value of farm production is calculated as follows:

$ 264,925	Gross farm revenue
86,088	Purchased market livestock
3,545	Purchased feed/grain
+ **68**	Change in purchased feed/grain
$ 175,360	Value of farm production

the farm business. The ROE estimated for a farm business might

The operating profit margin ratio can then be calculated by dividing the operating profit margin of $61,909 by gross farm

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revenue of $264,925 to get 23.4 percent, or dividing by the value of farm production of $175,360 to get 35.3 percent. There Is no absolute standard for this profitability measure, but the higher the ratio, the more profitable the farm business.

An agricultural business can increase profits by increasing the profit per unit produced or by increasing the volume of production while maintaining the profit per unll The operating profit margin ratio focuses more on increasing profit per unit, while the asset turnover ratio, which Is discussed later, focuses more on Increasing volume of production while rnalntalnlng the profit per unit

Measuring Financial Efficiency

There are a number of ratios that measure efficiency, which is an important component of profltabllity. The ratios relate physical output to selected physical inputs, and help evaluate whether or not farm assets are being used efficiently to generate income. The measures most widely used and generally applicable to all types of agricultural businesses are the asset turnover ratio and four operating ratios: operating expense ratio, depreciation expense ratio, farm Interest expense ratio, and net farm income from operations ratio.

Asset Turnover Ratio

The asset turnover ratio Is calculated by dividing gross farm revenue by average total fann **assets.** The asset turnover ratio for Jack and Julie London, calculated using the market-value approach to valuing assets, is calculated as follows:

$$\frac{\text{Gross farm revenues}}{\text{Average total farm assets}} :: \frac{\$\ 264{,}925}{\$1{,}078{,}146} :: 0.246$$

The asset turnover ratio measures how efficiently farm assets are being used to generate gross farm revenue. Intensity of use of physical assets is also reflected in the ratio. An agricultural business may have a large asset base, but not use those assets effectively to generate farm revenue. Ways to increase the asset turnover ratio include renting or teasing additional land, grazing winter wheat, double cropping, and using existing machinery and equipment more hours over the additional acres. Other ways include renting or leasing equipment and/or facilities rather than owning those assets, assuming that these are profitable alternatives.

This ratio can vary substantially across agricultural businesses, but the higher the ratio, the more efficiently farm assets are being used to generate farm revenue. The agricultural industry generally tends to have **both a** slow rate of asset turnover, particularly when assets are valued using the market-value approach, and a relatively low operating profit margin. As a result, agricultural firms tend to eam a low rate-or-return on rarm assets.

Important relationships exists between and among the rate-of-retum on farm assets, the operating profit margin ratio, and the asset turnover ratio. Multiplying the asset turnover ratio by the operating profit margin ratio will equal the rate-of-return on rarm assets. For the Jack and Julie London operation, multiplying the asset turnover ratio of 0.246 by the operating margin ratio of 0.234 results in the rate of return on farm assets of 5.76 percent. The asset valuation approach used to calculate the asset turnover ratio must be the same as the approach used to calculate the rate-of-return on farm assets. In addition, non-business assets should be excluded from the denominator.

Operational Ratios

The four operational ratios that reHect the composition of gross farm revenue (or value offarm production) are the operating expense ratio. the depreciation expense ratio, the farm interest expense ratio, and the net farm income from operations ratio.

Operating Expense Ratio

The operating expense ratio is calculated as follows:

$$\frac{\text{Total operating expenses - Depreciation expense}}{\text{Gross farm revenues}}$$

This ratio reflects the extent to which gross farm revenues are expended on rarm operating Inputs, excluding depreciation and Interest. Since total operating expenses are defined without Including Interest expenses, this ratio compares non-interest, non-depreciation operating expenses to total farm revenues. The higher the value of the ratio, the larger the proportion of gross farm revenues needed to offset all operating expenses.

For Jack and Julie London, the operating expense ratio Is calculated as follows:

$180,516	Operating expenses
• 22,164	Depreciation expense
$158,352	Total operating expenses

$158,352 + $264,925 :: .5977, or 59.8%

Ratios in the 40 to 60 percent range would be relatively efficient, with efficiency declining as the ratio rises. Ratios in the 60 to 75 percent range would reflect average efficiency, while ratios of 75 percent or larger would reflect marginal efficiency. The London's ratio of nearly 60 percent indicates that about 40 percent of gross farm revenue are available to replace depreciable assets, make all interest and principal payments on real assets, and provide family living. This ratio is approaching the average efficiency level.

Depreciation Expense Ratio

The depreciation expense ratio is calculated as follows:

$$\frac{\text{Depreciation } \textbf{expense}}{\text{Gross farm revenues}}$$

This ratio measures the proportion of gross farm revenue represented by the depreciation expense. Depreciation is a non-cash expense, yet reflects the level of capital replacement required to maintain the depreciable assets of the business. A relatively low depreciation expense ratio would tend to indicate little difficulty in making planned and timely replacement of capital assets. A relatlvely high ratio indicates that proportionally more gross farm revenue is required to maintain the capital base of the operation. The depreciation expense ratio varies between types of farm businesses due to variations in depreciation methods used and the differences in amounts of depreciable assets used in the production process.

For the Jack and Julie London operation, the depreciation expense ratio is as follows:

$22,164 + $264,925:: 0.0837, or 8.4%

This depreciation expense ratio of 8.4 percent indicates that the Londons would have little trouble making planned and timely replacement of capital assets. A relatively low ratio could also indicate that the Londons have a relatively old set of equipment.

Fann Interest Expense Ratio

The farm interest **expense** ratio is calculated as follows:

$$\frac{\text{Total farm Interest expense}}{\text{Gross farm revenues}}$$

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This ratio rocuses on the proportion or gross rarm revenues required to cover the rarm's interest expenses. Large interest expenses, and large interest expense ratios, are characteristic of highly leveraged farm operations. The acceptable percentage will vary according to the other claims against revenues, such as other production expenses and withdrawals for family living expenses. However, when this ratio rises to 15 percent, total farm interest expense Is a sufficiently large proportion of gross farm revenues that the rarm is likely suffering "financial stress.• Revenues rrom non-farm sources, such as off-farm employment or investments, may offset the higher ratio and reduce financial stress. If the ratio Is **above** 20 percent, however, financial stress may be more serious. The operator may want to consider alternative types of financing which would reduce interest rates, or may want to delay anticipated capital purchases which require addltlonal debt financing.

For the Jack and Julie London operation, the farm Interest expense ratio is as follows:

$28,180+ $264,925:: 0.1064. or 10.6%

This ratio Is less than the 15 percent at which many farm businesses are thought to be suffering some degree of financial stress.

The farm interest expense ratio also has important Implications for the profitable use of debt financing and financial risk. As indicated in eariier discussions of profitability, if the rate-of-return on total farm assets (ROA) exceeds the cost of debt financing, increasing debt Increases growth in farm equity. So, if the farm is profitable, a farm interest expense ratio above 0.20 might not be of concern. However, if the ROA is less than the interest rate on debt, then the rate-of-return on equity (ROE) will be less than ROA. If the firm is not profitable, additional debt financing would reduce growth In equity and a farm Interest **expense** ratio of 0.20 would be of concern. In general, farm interest **expense** ratios in the 0.20-0.25 range are probably high for many agricultural operations.

Net Fann Income from Operations Ratio

The net farm income from operations ratio is calculated as follows:

$$\frac{\text{Net farm income from operations}}{\text{Gross farm revenues}}$$

This ratio measures net farm income from operations as a proportion of gross farm revenues. Net farm income rrom operations reflects the return to unpaid operator and family labor and management, and equity capital. Thus, it reflects the proportion of gross farm revenues which remain after allowances for farm operating expenses. Net farm income from operations is calculated on a before-tax basis.

For the Jack and Julie London operation, the net farm income from operations ratio is as follows:

$56,229 + $264,925 = 0.2122 :: 21.2%

If the four operational ratios discussed above are added together, the total should equal lo 100 percent. For the London's operation, the total of the four ratios is as follows:

Operating expense ratio	59.8%
Depreciation **expense** ratio	8.4%
Interest expense ratio	10.6%
Net farm income from operations ratio	21.2%

Measures of Repayment Capacity

Repayment capacity is the ability of the farm operation to cover its financial obligations as they come due. Two measures of repayment capacity which focus on the ability of the farm operation to repay term debt and capital lease obligations from farm and non-farm income are the term debt and capital lease coverage ratio and the capital replacement and term debt repayment margin.

Term Debt and Capital Lease Coverage Ratio

The term debt and capital lease coverage ratio is calculated by dividing term debt and capital lease repayment capacity by term debt and capital lease repayment commitments. These components are reflected in the numerator and denominator, respectively, of the following equation:

(Net farm income from operations
\+ Total non-farm income
\+ Depreciation expense
\+ Interest on term debt
\+ Interest on capital leases
Total income and Social Security tax expenses
Withdrawals for family living)
\+ (Annual scheduled principal and interest payments on term debt
\+ Annual scheduled principal and Interest payments on capital leases)

The following equation is for those using consolidated financial information. Non-farm term debt principal and interest payments are induded with the farm term debt. Some discussion of reasons for including various components used to calculate this ratio may be helpful. Non-farm income is included because that source of income can be used, along with farm income, to repay debt and capital lease commitments. Depreciation expense is added to net farm income from operations because it is a non-cash expense. Interest on term debt and capital leases is added because the coverage ratio is calculated for the total payment of principal and interest. Income and social security taxes are subtracted because those uses would compete for the funds needed to repay term debt. Finally, withdrawals are subtracted because those dollars are not available to repay other obligations. Term debt is debt that is due beyond the current year.

For the Jack and Julie London operation, the term debt and capital lease coverage ratio is calculated as follows:

$56,229	Net farm income from operations
+16,742	Non-farm Income
+22,164	Depreciation expense
+19,722	Interest on term debt
+ 0	Interest on capital leases
-11,813	Total income and Social Security tax expense
-22,500	Withdrawals for family living
$80,544	Numerator

$27,147	Scheduled principal payments on term debt
+19,722	Scheduled interest payments on term debt
0	Scheduled principal and interest payments on capital leases
$46,869	Denominator

$80,544 +$46,869 = 1.72

Obviously, the ratio should be greater than 1.0. A strong ratio would be 1.5 or above, while an acceptable ratio would be 1.10

Total	100.0%	to 1.49. Higher ratio values also indicate greater flexibility to weather temporary economic adversity. If the ratio is less than

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1.0 , the operator will not be able to cover all debt and lease payments. With a ratio of 1.72, Jack and Julie London are in a strong repayment capacity position.

Even though the farm may generate sufficient earnings to cover all term debt and capital lease payments, cash may not be surficlent on a specific **date** to actually make the payments on a timely basis. Interpretation of this ratio can be incorrect in the shortrun if the operator is liquidating inventories togenerate cash or is building inventories. Even though depreciation expense appears in the calculation, there is no provision in the ratio for the replacement of capital farm assets. In addition, the appropriate value for this ratio willvary depending on the production andprice variability associated with the farm enterprise, the degree of diversification for farm and non-farm enterprises, and the financial and risk management ab!lltles of the operator.

Capital Replacement and Term Debt Repayment Margin

Another measure of repayment capacity is the capital replacement and term debt replacement margin. The margin is determined by calculating the capital replacement and term debt repayment capacity and then subtracting principal payments to be made on operating debt and the current portions of term debt and capital leases. The capital replacement and term debt replacement margin Is calculated as follows:

	Net farm income from operations
+	Total nonfarm income
+	Depreciation **expense**
	Total income and Social Security tax expense
	Withdrawals for family living
=	Capital replacement and term debt repayment capacity

	Capital replacement and term debt repayment capacity
	Payments on unpaid operating debt from a prior period
	Principal payments on current portions of term debt
	Principal payments on current portions of capital leases
	Total annual payments on personal liabilities not included in withdrawals
=	Capital replacement and term debt repayment margin

Thismeasure enables the operator andagricultural lender to evaluate the ability of the farm to generate funds necessary to repay debts which have maturity dates longer than one year and lo replace capital leases. The measure also enables farmers to evaluate the ability to acquire additional capital or service additional term debt and to evaluate the risk margin for capital replacement and debt service.

For the Jack and Julie London operation, the capital replacement and term debt repayment margin is calculated as follows:

$ 56,229	Net farm income from operations
+ 16,742	Non-farm income
+ 22,164	Depreciation expense
11,813	Total Income and Social Security tax expense
- 22,500	Withdrawals for family living
$ 60,822	Capital replacement and term debt repayment capacity
0	Payments on unpaid operating debt from prior period
27,147	Principal payments on current portion of term debt
0	Principal payments on current portion of capital leases
0	Annual payments on personal liabilities
S 33,675	Capital replacement and term debt repayment margin

As indicated, about $33,675 is available to replace capital and to serve as a marginduring times of adversity. The depreciation expense for the Londons was $22,164, so they have sufficient margin available to replace capital.

In general, the larger the dollar amount of the capitalreplacement and term debt repayment margin the greater the ability to handle risk. However, the margin can be misleading if the funds are not available when needed during the year to repay term debt and capital lease obligations. Also, the economic relationship between depreciation and cash payments for capital purchases is important. Depreciation of capital assets tends to be reflected rather evenly across tax years. However, capital purchases tend tobe "lumpy,· with the entire purchase price or the down payment and some financing costs **paid** at discrete points in lime. So, business analysis is oftenmore relevant If actual usefullifeisused to calculate depreciation rather than using tax depreciation.

Finally, one should attempt to look ahead for several years, rather than just at a single year in isolation, when evaluating the margin for capital replacement and debt **service.** An evaluation of repayment capacity should also include the liquidity ratios discussed earlier, and an analysis of the cash flow plan.

Computerized Farm Financial Statements

An OSU spreadsheet program, "Integrated Farm Financial Statements (IFFS)," facilitates calculation of farm cash flow budgets, income statements, balance sheets, and financial ratios. The computer program utilizes data from farm enterprise cost and return budgets and additional information provided by the farm orranch operator. Foradditional information, contact the Department of Agricultural Economics, Room 515 Agricultural Hall, Oklahoma State University, Stillwater, Oklahoma 74076-6026 or Cooperative Extension area agricultural economics specialists.

Summary and Conclusions

Analyzing the level of key financial measures and their relationships can provide valuable insights to farm and ranch managers. Comparisons of measures from year to year signal whether the business financial performance is satisfactory and whether the financial position is improving or deteriorating. It is often very difficult to compare the absolute levels of financial measures for different farms due to fundamental differences in the size, capital requirements, and cash flow produced by the operations.

For more information on the financial statements, see OSU Extension Facts F-751, Developing a Cash Flow Plan; Extension Facts F-752, Developing a Balance Sheet; and Extension Facts F-753, Developing an Income Statement.

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Name _ _ _ _ _ _ _ _ _ _ _ _

2006 Okmulgee Ag Econ Test

Select the most correct answer for each question. Each question is worth 5 points.

1. A grain elevator operator wants to hedge grain that is in storage to protect against a price decline. When the grain is purchased the operator should:

   A. Sell futures contracts of grain and buy the contracts back when the grain is sold.
   B. Buy futures contracts of grain and sell the contracts when the grain is sold.
   C. Sell the grain and buy futures contracts if the price goes up.
   D. Sell the grain and sell the futures short, and then buy back the futures at the end of the storage period.

2. Which of the following statements correctly describes the first year's payment on $9,000 loan on which the principal is to be repaid in 3 equal, annual installments with the interest charged at 10%.

   A. principal = $4,500, interest = $900
   B. principal= $3,000, interest = $900
   C. principal = $6,000 interest = $300
   D. principal= $6,000 interest = 600

3. Your total cash costs of producing com this year is $20,000. You borrowed 50% of the production costs at the local bank, at a 15% interest rate. The yield was I0,000 bushels. You paid the loan in full exactly a year after you borrowed it. What is the interest cost per bushel of com produced?

   A. $1.50
   B. $1.30
   C. $0.15
   D. $3.00

4. Assume an acre of land will produce an average net return to land of $40.00. A fanner wants a 7% return to land. What is the maximum the farmer can pay for an acre of this crop land?

   A. $280
   B. $400
   C. $428
   D. $571

5. The demand curve shows the relationship between:

   A. Consumer tastes and the quantity demanded.
   B. Price and the quantity demanded.
   C. Price and production costs.
   D. Money income and quantity demanded.

6. A measure of liquidity is:

   A. Net capital ratio.
   B. Debt to asset ratio.
   C. Current ratio.
   D. Debt to equity ratio.

7. If consumers buy less beef because pork prices have decreased, and nothing else effects the market, there has been:

   A. An increase in demand for beef
   B. A decrease in demand for beef.
   C. No change in demand for beef.
   D. Decrease in the supply of beef.

8. Inflation means:

   A. A dollar will buy more in the future than it will buy today.
   B. The prices at which the interest rate will equal the inflation rate.
   C. The prices at which the interest rate will increase over time due to higher prices.
   D. The purchasing power of a dollar declines over time.

9. Which of the following is most closely related to achieving "economies of size?"

   A. Opportunity cost of equity capital and labor.
   B. Spreading out the fixed costs.
   C. Increasing variable costs per unity.
   D. Reducing cash costs.

10. Which of the following is not a current asset?

    A. Non-breeding livestock
    B. Machinery
    C. Crop inventory
    D. Accounts receivable.

11. A business which is highly leveraged is one which has:

    A. A large debt relative to net worth
    B. Many current liabilities
    C. A very large net fann income.
    D. A large amount of equity capital and little debt capital.

12. A farmer's net worth statement shows the following balances: current assets= $25,000, non-current assets= $375,000, current liabilities= $70,000, and non-current liabilities= $230,000. The farmers debt (liability) to asset ratio is:

    A. 0.30 to 1.00
    B. 0.60 to 1.00
    C. 0.75 to 1.00
    D. 1.25 to 1.00

13. The purpose of tax planning and management is:

    A. To minimize the tax bill.
    8. lmprove record keeping
    C. Reduce the chance of audit
    D. Maximize profits after taxes.

14. An analyst is studying a dry bean enterprise. Assuming that information is available and a farmer is trying to get the maximum returns above variable costs, the analyst should recommend that the farmer produce where:

    A. Average total cost is equal to average total revenue.
    8. Marginal cost is equal to marginal revenue.
    C. Marginal cost is equal to average total cost.
    D. Marginal revenue us equal to average variable cost.

15. Income earned or expenses incurred but not yet received or paid are known as:

    A. Spent income or expenses.
    8. Accrued income or expenses.
    C. Recorded income or expenses.
    D. Cash income or expenses.

16. A supply curve shows the relationship between quantity supplied and:

    A. Quality
    8. Price
    C. Income
    D. Demand

17. A producer could maximize returns by increasing production as long as the:

    A. Average total cost of production per unity produced are less than the selling price.
    8. Variable costs are less than the selling price.
    C. Added return of the last unity produced is greater than the added cost of producing it.
    D. Fixed costs per unit produced can be decreased.

18. A soybean producer decided to store soybeans in the local elevator for six months. The price at harvest is $7.20 per bushel and the elevator charges 2¢ per bushel per month for storage plus a 5¢ per bushel handling charge. The producer has 5,000 bushels to sell and must borrow $36,000 at 8% annual interest while the soybeans are stored. What price must be received for the soybeans to break even and cover the storage and opportunity costs?

    A. $7.37
    B. $7.45
    C. $7.66
    D. $7.95

19. One advantage of leasing is that:

    A. Lease payments are tax deductible while interest payments are not.
    B. Leasing always provides a larger deduction than depreciation.
    C. Leasing does not require as much initial capital.
    D. Investment credit can be used for leasing.

20. The main difference between cash and accrual accounting is that accrual accounting includes:

    A. A charge for unpaid family labor.
    B. Depreciation.
    C. Adjustments for changes in inventory
    D. Sales of capital assets.

21. Which of the following is the most appropriate measure for comparing the profitability of two farms?

    A. Debt/ asset ratio
    B. Rate of return to equity capital
    C. Gross farm income
    D. Rate of return on assets

22. Crop insurance, hedging, options, and liability insurance provide a means of:

    A. Increasing profits
    B. Increasing working capital.
    C. Reducing risks.
    D. Lowering costs.

23. A cattle feeding operation has sales of $60,000, feed purchases of $40,000, other costs of $I0,000, an opening inventory of $40,000, and a closing inventory of $32,000. What is the net farm income for this operation?

    A. $ 10,000
    B. $ 2,000
    C. $ 60,000
    D. $180,000

24. The difference between a cash price at a particular location and a specified futures contract price is called:

    A. Margin.
    B. Basis
    C. Option.
    D. Interest

25. Offsetting a position in the cash market with an equal position in the futures market to minimize price risk is called:

    A. Speculating.
    B. Limit move.
    C. Hedging.
    D. Offset move.

26. A farmers com crop has an expected yield of 95 bushels per acre and production cost of $140.00 per acre.. The expected harvest price is $2.25 per bushel for com. Soybeans can be raised at a production cost of $105 per acre with an expected yield of 30 bushels per acre. At what price would soybeans generate the same net return per acre as com?

    A. $5.84
    8. $5.96
    C. $6.07
    D. $6.29

27. The tax you owe on each additional dollar of taxable income is called the:

    A. Section 179 deduction
    8. Straight-line tax rate
    C. Marginal tax rate
    D. Federal adjusted taxable income;

28. The present value of $100 that will be received at the end of 1 year, given a 5% interest (discount) rate is:

    A.$ 90
    8. $ *95*
    C. $100
    D. $105

29. A farmer rents an adjacent 100 acres of cropland for $40 per acre to operate with the current 400 acres and existing equipment. The effect on the farmer's equipment costs will be:

    A. To increase fixed costs per acre.
    8. To decrease fixed costs per acre.
    C. To increase variable costs per acre.
    D. To decrease variable costs per acre.

30. An elevator quotes the price per bushel of soybeans at "25 cents under November futures." What would futures have to sell for to provide a cash price of $7 per bushel?

    A. $6.75
    B. $7.25
    C. $7.50
    D. $8.00

31. A feed lot operator buys feeder steers, finishes them, and sells them. The operator estimates that the finished steers will sell for $80 per cwt, and that it will cost $250 per head to bring them from the 700 pound purchase weight to the 1100 pound selling weight. What is the highest price the operator can pay per hundredweight for 700 pound feeder steers to break even?

    A. $62.
    B. $80.
    C. $90.
    D. $96.

32. A grain combine can be purchased for $90,000. Total annual fixed costs will be $12,000, and variable costs per acre will be $10 per acre. If a custom operator can be hired to combine grain for $25 per acre, what is the minimum number of acres one should plan to harvest to justify buying the combine?

    A. 600
    B. 800
    C. 1000
    D. 1200.

33. On March 1, a farmer borrowed $25,000 to buy seed and fertilizer. On December 1, the farmer repaid the $25,000 along with $1,828.13 interest. What is the annual interest rate of the loan?

    A. 7.31
    B. 8.77
    C. 9.75
    D. 18.28

34. A local elevator quotes corn at 20¢ under March futures, and will pick up the grain for free. A tenninal quotes 5¢ under, but it costs 10¢ to haul it there. If March futures sells for $3.25, where can you get the highest price, and how much is it?

    A. $3.10 at the terminal
    B. $3.20 at the terminal
    C. $3.20 at the elevator
    D. $3.05 at the elevator.

35. Renting farm land on shares of production rather than cash results in:

    A. Less risk for the landlord, more risk for the tenant.
    B. More risk for the landlord, less risk for the tenant.
    C. More risk for both the landlord and the tenant.
    D. Less risk for both the landlord and the tenant.

36. As output increases, average fixed costs will:

    A. Remain constant.
    B. Increase.
    C. Decrease.
    D. Decrease and then increase.

37. The percent return on equity (ROE) measures the percent return on:

    A. Investment.
    B. Profit_.
    C. Net worth.
    D. Total Assets.

38. A farm manager with a 1:1 debt/equity ratio who is in need of a high level of life insurance protection per dollar of premium should purchase:

    A. A limited-payment policy.
    B. A straight-life policy
    C. An endowment policy.
    D. A term policy.

39. For maximum net returns, a farmer should substitute machinery for labor when:

    A. The annual costs of machine use are equal to the costs of labor.
    B. The value of labor saved is higher than the costs of the machine used.
    C. There is a limited supply of labor.
    D. The additional machine will increase labor efficiency.

40. Why do farmers generally have no control over prices of their products?

    A. There are many sellers competing in the market.
    B. Futures market speculators set prices.
    C. Middlemen set prices.
    D. The Federal Price Stabilization Board sets prices.

41. If your analysis of the balance sheet indicates the debt to equity ratio to be 0.5 to 1.0, what is the debt to asset ratio?

    A. 0.33 to 1.00
    B. 0.50 to 1.00
    C. 1.50 to 1.00
    D. 0.25 to 1.00

42. Which of the following should be used to determine the amount of net return earned by the farm?

    A. Cash flow
    B. Income statement
    C. Partial budget
    D. Enterprise budget

43. A farmer has liabilities of $456,000, and assets totaling $658,000, of which machinery is $240,000. What will the farmer's debt/equity ratio be if the lender devalues the machinery by 10%?

    A. 1.39
    B. 2.25
    C. 2.56
    D. 3.56

44. A constant payment loan with payment consisting of principal and interest is called:

    A. An amortized loan.
    B. A discounted loan.
    C. A capital loan.
    D. A fixed rate loan.

45. Which of the following factors influences the demand for a product?

    A. The price of a substitute product.
    B. Consumer income levels.
    C. Tastes and preferences.
    D. All of the above.

46. One possible advantage of incorporating the family farm is_____

    A. The need to keep fewer records.
    B. Limited liability.
    C. Double taxation.
    D. Fewer regulations and rules to follow.

47. An accrued liability that must be paid within the year is a_____

    A. Current asset
    B. Non-current asset
    C. Non-current liability
    D. Current liability

48. The projected cash flow is useful in estimating:

    A. Credit needs.
    8. Depreciation.
    C. Return on assets.
    D. Profitability.

49. The "basis" of a new depreciable asset when a trade-in is involved is:

    A. The nondepreciated balance of the asset traded plus the cash paid.
    8. Its market price plus the nondepreciated balance of the trade-in.
    C. The cash paid plus the amount financed.
    D. The market price minus the cash paid.

50. What value should be used on a cow-calf enterprise budget for the value of homegrown feeds?

    A. Cash invested in growing crops.
    8. Actual purchase cost of similar commercial feeds.
    C. Actual production costs of the homegrown feeds.
    D. Net selling price of the homegrown feeds.

51. A bull market is one in which:

    A. No cows can be sold.
    B. Market prices are unchanging.
    C. Market prices are trending up.
    D. Market prices are trending down.

52. Which of the following criteria for ranking investments considers the time value of money?

    A. Simple rate of return method
    B. Payback method
    C. The extrapolation method.
    D. Net present value method.

53. Which of the following is a fixed cost?

    A. Interest on operating capital.
    B. Depreciation on buildings and equipment.
    C. Seed and fertilizer
    D. Fuel and lubrication.

54. The financial condition of a business at a point in time is best shown on a(n):

A. Net worth statement.
B. Income statement.
C. Cash flow statement.
D. Depreciation record.

55. A $1 deductible expense (before tax) will cost ____ after tax if the farmer's marginal tax rate is 40%.

A. $0.00
B. $0.40
C. $0.60
D. $1.00

56. In analysis of a farm, what would you do if a cash flow projection indicated that there would be more expenses than income in a certain month?

A. Terminate the enterprise causing the cash flow problem that month.
B. Use savings, delay expenses, move up sales, or borrow money.
C. Change from cash to accrual accounting method.
D. Change depreciation methods.

57. Study the following investment's projected net cash flows and net present value. NPV was calculated using a discount rate of 11.00%. NPV is $114.25. Which of the following rates will be the internal rate of return? (You need not make any calculations but may do so if you would like.)

Year	Net Cash Flow	11%	Present Value
0	-11,400.00	1	-11,400.00
1	8,000.00	0.9009009	7,207.21
2	4,000.00	0.8116224	3,246.49
3	1,000.00	0.7311914	731.19
4	500.00	0.658731	329.37
NPV			114.25

A. 10.987%
B. 11.744%
C. 18.000%
D. 6.000%

Given the Net Worth Statement and Income Statement for the Adams Farm (on the following pages):

58. What is the rate of return on assets (ROA) for 1998?

    Write your answer in the blank as a percent, using two decimal places.

    For example, 10.43%.

59. What **is the** rate of return on equity (ROE) for 1998?

    Write your answer in the blank as a percent, using two decimal places.

    For example, 7.65%.

60. Which of the following statements is true about the Adams Farm for 1998?

    A. ROE > ROA > average interest rate

    B. Average interest rate> ROA> ROE

    C. ROE > average interest rate > ROA

    D. ROA > average interest rate > ROE

NET WORTH STATEMENTS FOR THE ADAMS FARM

CunwntAINla		jlQjtll		j2131LIZ		imima
C8lhlChecldng	S	20,470	S	755	S	S.149
lfflfllmrlel						
Craps	S	95,972	S	109,790	$	124.300
Market Uvestock	S	15,800	$-	18.150	$	9,000
Crape In Govt. Loan	S	13,.1	$		$	10,705
AccalnlReceivable	S		S		S	20.823
Prapald Expen111	S		$	3,410	S	8.270
. Total CUnnt Aaslll	S	148,123	$	130,10I	●	178.247
NonculNlltAa...						
Machll*J and Equipment	S	157,050	$	181,900	S	179.SOO
BnNdng UveslDck	$	35,050	$	44,950	S	23.800
Buildlngl and lmprovementl	S		S		S	
Lind	S		S		S	-.OOO
Other Nancwrant AB••	S		S		S	
Total Noncurrent Aasata	●	1 92,100.	$	208.UO		291.,300
Total Assets	●	338.221	(	338,111	●	489,IC7
Current Uablfflla						
Ac:auedlnterelt	S	2.808	S	797	S	100
Amudllpayable	S		S		S	9,282
0pel1llngl Loan Payable	S	49,635	S	.,324	S	83,724
Clnac Partlan dTerm Debt	S	311	$	17,534	S	18.251
Other Acclnd Expefl111	S		S		S	
Total CUnwnt LlablllltlN	$	52,ISZ	•••••		$	12,371
NoncurNllt llablllltla						
Notes Payable						
Machinery		175fJff1		1.-a,		1
Breeding Uvestock						
Real Estata Debt	$			0	S	77,037
Total Noncurrent Llablllltla	●	175,817	S	148,980	$	223,331
Total llabUltlee	S	228,519	S	213.111		311,748
Net Worth	S	109,TCM	$	123,340	S	153.137

INCOME STATEMENTS FOR THE ADAMS FARM

	JIil	1111
·cam	$ 184,124	S 30,357
com.netgovt.llle	S	
SotJbem•	S 88.082	$ 82,204
Grall,		77,988
	S 2.781	$ 2,724
Bulc.lWI	S 10.291	$ **8,388**
RalNdHap	S 2.181	S 1,813
WNnldPlga	S 50,308	$ 118,158
BNfCIIM		
Culaonllllf		S 14,181
Culbreedingh 111i*	3,318	
OIIISgovt.peyn.aa	$ 11.505	S 22.278
Cullamwn	$ **708**	S . **981**
Olw flnn lncame	S 3.978	$ 3,381
Cnlpl	S **13.111**	I 14,510
LM1tai*	$ 350	S (7,150)
hange in Accounts Receivable		
Total Revenue	**$ · 321,490**	
xpenses	S	20,820
Purchased Feed	S 17,115	S 34,917
Purchased Market Livestock		S 590
Cash Operating Expenses		
Seed	S **27,082**	I 11.233
Fertilizer	S 23,520	S 7,032
Crop chemicals	S 18,281	S 17,338
Crop insurance	S 19.203	S· 11,548
Drying fuel	S **8,947**	S 3.734
Crop marketing	$ 7,012	S **38.881**
Crop miscellaneous	S 18.823	S 148
Purchased feed	S	
Veterinary	$ 1,928	S 2.590
Livestock supplies	S 1,319	S 3,288
Livestock markeing	S	S **188**
Interest	S	

Fuel and OH	$ 11,892	$ 14,531
Repairs	$ 3.113	S 2,073
Repair, machinery	S 18,294	$. 4,834
Repair, DvesIDck equip	$ 1,398	$ 1,979
Repair, lxiklng	S 220	$ **4,092**
CUatamhire	S 5,545	S **8,802**
Hired labor	S 3,809	S 3.508
LandRent'	S 72.800	S 74,548
Machinery and bldg leases	S **8,344**	S 13,089
Farm Insurance	S 3,070·	S **5,380**
Ulllltlel	S 2.471	S 4,817
Duel	S -	
Mlscellaneoul	S 2.339	$ 2,129
Overhead		
Inwntoly **AdJ•nen•**		
ArmlnaPayable	S •	$ 9.292
Prepaid Expen1a1	S (3.410)	$ **(4,880)**
Other Amved Expensea	I	
Depr9Clallan	I 14,750	S 21,151
Total Operating Expen1•	$284,548	S 292.458·
CelhlnteralPald	S 24,888	
Cla.ge In flderest payable	$ (2.009)	S 25,744
Total lna.r.t Expenu.	S 22.979	S 25(047)
Total l:xpena•	$287,127	$ 317.113
Net Fann Income FramOpeaalfo.•	S **41,IIS**	S 11,078

15

2006 Okmulgee Ag Econ Test
Answer Sheet

Naine _____ Contestant # School _____

1	26	51
2	27	52
3	28	53
4	29	54
5	30	55
6	31	56
7	32	57
8	33	58
9	34	59
10	35	60
11	36	
12	37	
13	38	
14	39	
15	40	
16	41	
17	42	
18	43	
19	44	
20	45	
21	46	
22	47	
23	48	
24	49	
25	50	

2006 Okmulgee Ag Econ Test
Answer Sheet

Name_____ Contest# School _____

1	A	26	B	51	C
2	B	27	C	52	D
3	C	28	B	53	B
4	D	29	B	54	A
5	B	30	B	55	C
6	C	31	C	56	B
7	B	32	B	57	B
8	D	33	C	58	6.97%
9	B	34	A	59	2.22%
10	B	35	B	60	B
11	A	36	C		
12	C	37	C		
13	D	38	D		
14	B	39	B		
15	B	40	A		
16	B	41	A		
17	C	42	B		
18	C	43	C		
19	C	44	A		
20	C	45	D		
21	D	46	B		
22	C	47	D		
23	B	48	A		
24	B	49	A		
25	C	50	D		

1999 Okmulgee Ag Econ Test
Answer Sheet

Name /CcY Contest# School

1.	A	26.	13.	51.	e
2.	a	27.	e	52.	12
3.	/>	28.	8	53.	13.
4.	12	29.	8	54.	A
5.	/J	30.	fj	55.	C
6.	C	31.	(!	56.	(!
7.	6	32.	13.	57.	C.
8.	D	33.		58.	A
9.	73	34.	A	59.	
10.	8	35.	13.	60.	
11.	A	36.	(!		
12.	e	37.			
13.	/)	38.	D		
14.	fl	39.	13.		
15.	/1	40.	A		
16.	6	41.	A		
17.	C:	42.	a		
18.		43.	t:!		
19.	t!	44.	A		
20.	e .	45.	D		
21.	Q	46.	f3		
22.	e	47.	Q		
23.	13.	48.	A		
24.	u	49.			
25.	c:.	50.	i)		