Team Participation Event – "Team" Portion (35 pts.)

2007 Iowa Vo-Ag/FFA
Farm Business Management Career Development Event

As a group (or team), you are to collectively select the best answer to each question below (7 pts. each). Code your answers on the answer sheet provided (one answer sheet per team). Be sure to erase completely any answers that your team changes.

This activity is designed to test your ability as a group to 1) apply your knowledge of economic and business concepts to actual firm decisions, and 2) generalize and summarize the basic content and implications of economic articles and reports. The applications will focus on information summarized in selected publications previously cited as reference materials for this event.

In particular, this activity focuses on sub topics of farm management related to corn production and marketing which is important to many Iowa farmers if they want to improve the returns to their agricultural operations.

Iowa State University has conducted a number of rotation-fertility studies on the Experiment Station farms. These studies involve several different possible rotations and, usually, four levels of nitrogen use. Four rotations from the Iowa State University Northeast Research farm include continuous corn (CC), corn/soybeans (CS), corn-corn-soybeans (CCS), and corn-corn-corn-soybeans (CCCS). Table 1 shows average yields for 2000-2005 based on rotation type and nitrogen fertilizer level (N = pounds).

Table 1. Average Yields Based on Rotation and Nitrogen Fertilizer Level and Time Period, Northeast Research and Demonstration Farm, Iowa State University

Crop	2000-2005			
	0 N	**80 N**	**160 N**	**240 N**
Continuous Corn (CC)	49	122	150	154
Corn in CS	105	163	181	191
1st corn in CCS	106	160	183	180
2nd corn in CCS	47	123	153	167
1st corn in CCCS	104	158	182	181
2nd corn in CCCS	46	117	153	166
3rd corn in CCCS	51	115	145	157
Soybeans in				
CS	54.2	54.1	54.3	54.8
CCS	56.1	57.5	56.6	57.2
CCCS	57.7	58.3	58.4	58.9

Source: AgDM newsletter, November 2006, Mike Duffy.

1. Based on information in Table 1, which of the following incremental 80 pounds of N has the largest incremental corn yield impact?
   a. from 80 N to 160 N in the first corn year of a CCS rotation
   b. from 160 N to 240 N in corn of a CS rotation
   c. from 0 N to 80 N in the second corn year of a CCS rotation
   d. from 80 N to 160 N in the third corn year of a CCCS rotation

2. What is the "marginal product" of N in Table 1?
   a. the incremental cost of another pound of N
   b. the incremental yield of corn per each additional N applied
   c. the incremental yield of corn in a CS rotation versus a continuous corn rotation
   d. the additional revenue from corn per additional bushel of corn produced

3. Assume a farmer in Table 1 is using a continuous corn rotation and the farmer's only variable cost is N. Whether or not the farmer would apply 160 N instead of 80 N would depend on:
   a. only the price of N
   b. only the price of corn
   c. only the price of corn and the cost of the land
   d. only the price of N and the price of corn

4. Refer to Table 1. Assume a farmer is choosing between a continuous corn rotation with 160 N (150 bu. yield each year) and a CS rotation with 160 N (181 bu. corn yield one year and 54.3 bu. soybean yield the second year). Over a two-year period, what price of corn per bushel would make the continuous corn rotation preferred also assuming the price of soybeans per bushel is $5.50, other extra costs (other than N) per acre of corn versus soybeans are $100, and the price of N = $0.30 per pound? Disregard time value of money considerations. Also note, over two years, the producer would use an extra 160 pounds of N with a continuous corn rotation.
   a. > $3.75
   b. > $5.00
   c. > $4.67
   d. > $3.35

5. Assume on May 10, a corn producer attempts to establish a price for his/her new crop this year by hedging with December futures currently trading at $3.80 and the expected basis at delivery time is 35 cents under the December futures contract. This producer's expected net price at delivery time (ignoring hedging/commission costs) is:
   a. $3.80
   b. $4.15
   c. $3.45
   d. the current cash price + $0.35

6. Assume a grain elevator in October agrees to buy 10,000 bushels of corn to be delivered in December for 40 cents under the current December corn futures price of $3.65. If the elevator expects to receive a 40 cent gross storage return for storing the corn for 5 months to May, it would most likely:
   a. have to sell cash corn for $3.95 in May
   b. currently sell 10,000 bushels of May corn futures at 3.75 with an expected May delivery basis of 10 cents
   c. have to currently sell May corn futures for $4.05
   d. have to currently sell December corn futures for $4.05

7. In December, assume the March corn futures price is $3.70 with an expected March basis of 25 cents. The current cash corn price locally in December is $3.00. Which of the following is the most likely maximum cash bid price that would be offered to a producer for March delivery by a local elevator if it wants to generate a 5 cent per bushel margin?
   a. $2.70
   b. $3.20
   c. $3.40
   d. $3.90

Team Participation Event – "Individual" Portion
2007 Iowa Vo-Ag/FFA
Farm Business Management Career Development Event
(Maximum possible pts: 5 per individual and 15 per team)

Instructions: The questions below are related to the problems you just worked on as a team. Select the best answer (1 pt. each). Code your answers on the answer sheet provided. Be sure to erase completely any answers that you change.

1. In 1930, there were 21.97 million acres planted to principal crops in Iowa. In 2006, the corresponding number of acres was 24.62 million. Which of the following statements best characterizes the change in the composition of those planted acres from 1930 to 2006?
   a. the percentage of acres devoted to corn has increased substantially
   b. the percentage of acres devoted to corn has decreased substantially
   c. the percentage of acres devoted to soybeans has decreased substantially
   d. the percentage of acres devoted to soybeans has increased substantially

2. A November 2006 AgDM newsletter article by Dr. Mike Duffy, ISU extension economist, contained recent yield data based on research done at ISU Experiment Station farms. Which of the following variables were shown to impact corn yields?
   a. nitrogen fertilizer level, rainfall level
   b. nitrogen fertilizer level, crop rotation plan
   c. rainfall level, crop rotation plan
   d. price of corn, price of nitrogen fertilizer

3. Assume in January, a farmer has hedged (using March futures) some corn in storage on the farm. The 'net' price this farmer receives in March for his/her corn will be most adversely impacted by which of the following:
   a. the basis in March turns out to be 10¢/bushel greater than expected
   b. the cash corn price decreases 15¢/bushel from January to March
   c. the futures corn price increases 10¢/bushel from January to March
   d. storage costs increase 2¢/bushel per month

4. Which of the following is associated with the economic 'law of diminishing product' in corn production?
   a. corn basis typically decreases after harvest
   b. price risk is diminished with hedging
   c. corn yields increase at a decreasing rate as nitrogen fertilizer levels increase
   d. an increase in the price of nitrogen fertilizer has no impact on the best amount of fertilizer to apply in corn production

5. In December, a corn farmer has received a cash bid price from a local elevator on corn he/she plans to deliver in the future in March. The two main components of this cash price bid are:
   a. the March corn futures price and the December corn futures price
   b. the current cash corn price and the expected corn basis in March
   c. the current March corn futures price and the expected corn basis in March
   d. the current cash corn price and the December corn futures price

2007 Iowa Farm Business Management Career Development Event

INDIVIDUAL EXAM (150 pts.)

Select the best answer to each of the 75 questions to follow (2 pts. ea.). Code your answers on the answer sheet provided. Be sure to erase completely any answers that you change. You have 120 minutes (maximum) to complete this exam.

Section A. Economic Principles

1. A demand curve for a product shows the different combinations of:
   a. quantity supplied and quantity demanded
   b. consumer income and quantity demanded
   c. the product's price and quantity demanded
   d. sales and total revenue

2. A straight line has the equation $y = 20 + 2x$, where x is the horizontal axis variable. The y-axis intercept of this line is:
   a. +20
   b. 2x
   c. +2
   d. +10

3. The point of intersection of a market demand curve and a market supply curve is known as the point of:
   a. equilibrium
   b. diminishing returns
   c. break even
   d. profit maximization

4. An increase in the willingness and ability to purchase a product by consumers in a market would be shown graphically as a shift:
   a. right of a supply curve
   b. right of a total revenue curve
   c. up of a supply curve
   d. right of a demand curve

5. Which of the following is the economic meaning of an 'average' cost?
   a. typical cost in the past
   b. typical cost for a typical producer
   c. cost per unit of output
   d. cost of an average quality product

6. An opportunity cost is:
   a. the cash cost of an opportunity pursued
   b. the noncash cost of an opportunity foregone
   c. the cash cost of an opportunity foregone
   d. what one has to pay up front to pursue an opportunity

7. Total revenue divided by the price of the output is:
   a. marginal revenue
   b. quantity of output
   c. price of the output
   d. average revenue

8. A variable cost is normally defined as one that varies with:
   a. time
   b. quantity of output
   c. price of the output
   d. uncertainty

9. The point of diminishing returns is where
   a. total revenue starts to decline
   b. total product starts to decline
   c. break even is achieved
   d. marginal product starts to decline

10. Assume products x (= ethanol) and y (= petroleum) are substitutes. A decrease in the price of x is most likely to have this impact:
   a. shift the demand curve for x to the right
   b. shift the demand curve for y to the left
   c. shift the supply curve of y to the right
   d. a surplus of y

11. How responsive producers' output in a market is to changes in the price of the product they are producing is known as:
   a. price elasticity of supply
   b. technological change
   c. market demand
   d. tastes and preferences

12. Which of the following is true for a firm that is <u>NOT</u> minimizing its costs of producing a given level of output?
   a. it is not producing the profit-maximizing output
   b. costs can NOT be reduced
   c. profit is not maximized
   d. breakeven output has been surpassed

13. What are the two main types of production periods?
    a. fixed and variable
    b. increasing and decreasing
    c. profitable and nonprofitable
    d. long run and short run

14. What is the economic term used to describe products purchased from a foreign country?
    a. imports
    b. gross foreign product
    c. exports
    d. trade deficit

15. If a firm can sell all of its output at the going market price of $4.00, what is the firm's marginal revenue of selling its last unit of output if it produces 1,000 units.
    a. $4,000
    b. $250
    c. $4.00
    d. $(4.00/1000)

16. If a farmer has a 30% marginal tax rate and a <u>before-tax</u> cost of $2.00, what is the farmer's after-tax cost?
    a. $2.00
    b. $2.30
    c. $2.60
    d. $1.40

17. A farmer has $100,000 in equipment used exclusively for cotton. The equipment will last five years and have a salvage value of $0. The farmer plants 1000 acres of cotton per year. If the interest rate is 8% on average annual investment, what will be the fixed costs per year (depreciation and average interest) for this machinery per acre of cotton?
    a. $16
    b. $20
    c. $24
    d. $28

18. The financial statement which is used to list assets, liabilities, and owner's equity of a farm business is the:
    a. balance sheet
    b. income statement
    c. partial budget
    d. cash flow statement

19. A used combine can be purchased for $180,000. Total annual fixed costs are $15,000, and variable cost per acre is $10. If a custom operator charges $25 per acre, what is the minimum number of acres needed to justify buying the combine?
    a. 1500
    b. 600
    c. 1000
    d. 7200

20. A feedlot operator purchased 100 feeder steers with an average weight of 600 pounds and sells them at an average weight of 1,050 pounds. The total feed cost is $25,000. Feed cost per pound of gain is:
    a. $0.02
    b. $0.23
    c. $0.42
    d. $0.56

21. A farm's wheat yield has averaged 35 bushels per acre while the sunflower yield has averaged 1500 pounds 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 price per hundredweight for sunflowers would equal the net return for wheat?
    a. $7.73
    b. $8.07
    c. $8.85
    d. $9.10

22. Which of the following is usually assumed to result in a limited number of possible choices in Economics?
    a. unlimited wants
    b. constraints such as budgets
    c. time value of money
    d. consumer tastes and preferences

23. Which of the following economic terms is most closely associated with declining long-run average costs as output increases?
    a. economies of size
    b. law of supply
    c. law of diminishing returns
    d. specialization

24. For an item that is extremely limited in supply, such as an acre of land in a given area, the price of that land is primarily determined by:
    a. the level of demand
    b. a price floor
    c. the owner of that land
    d. factors other than supply and demand

25. A "shortage" of a product in a market normally means:
    a. supply exceeds demand
    b. there is no supply
    c. the market price is restricted to a level below equilibrium
    d. supply has decreased

Section B. Records and Analysis

Use the attached <u>ending net worth statement</u> (balance sheet) and <u>net farm income statement</u> to answer questions #26-33.

26. What was this farm's market value net worth on Dec. 31, 2006?
    a. $595,514
    b. $1,122,379
    c. 1,236,095
    d. 1,762,960

27. The farm's <u>market value net worth</u> increased by _____ from a year ago.
    a. $57,381
    b. $96,546
    c. $538,133
    d. $1,025,833

28. The main difference between this farm's <u>market value net worth</u> and <u>cost value net worth</u> is:
    a. stored grain was valued at a higher price this year
    b. land is valued at a price higher than its original purchase price
    c. machinery has depreciated in value
    d. they purchased more land

29. Using 'market' values, the farm's total debt-to-equity ratio is:
    a. 44%
    b. 108%
    c. 36%
    d. 57%

30. How much is this farm's 'working capital'?
    a. $15,000
    b. $304,760
    c. $171,186
    d. $1,122,379

31. From the Net Worth Statement and Net Farm Income Statement, what was this farm's asset turnover ratio for 2006 using market values?
    a. 21%
    b. 18%
    c. 30%
    d. 6%

32. From the Net Farm Income Statement, how much was this farm's net farm income after adjusting for capital gains?
    a. $93,532
    b. $91,532
    c. $95,532
    d. $113,532

33. From the Net Farm Income Statement, what was the value of this farm's net (to gross) farm income ratio?
    a. 29%
    b. 26%
    c. 39%
    d. 35%

Use the attached cash flow budget projection to answer questions #34-40.

34. How much cash does this farm expect to take in from livestock sales during the coming year?
    a. $96,004
    b. $211,400
    c. $20,161
    d. $75,843

35. Approximately, how many dollars of operating loans does this farm need to borrow in Jan.-Feb. to have a positive cash balance at the end of February?
    a. none
    b. $46,000
    c. $31,000
    d. $103,000

36. This farm plans to trade for a new pickup this year. In what period do they plan to do this?
    a. Jan.-Feb.
    b. Mar.-Apr.
    c. July-Aug.
    d. Nov.-Dec.

37. How much is this farm's projected net farm income for 2007?
    a. $648,784
    b. $16,383
    c. $31,408
    d. Can't tell from the cash flow budget.

38. Which of the following expenditures is included in both a cash flow budget and a net farm income statement?
    a. wages paid
    b. off-farm rental income
    c. principal payments on a loan
    d. depreciation

39. If this farm uses its ending cash balance to pay down its operating loan balance at the end of the year, will the balance be larger or smaller than at the beginning of the year?
    a. larger
    b. smaller
    c. same
    d. can't tell

40. This farm's projected total cash outflows for the year are?
    a. $102,607
    b. $46,954
    c. $310,509
    d. $16,383

Refer to the attached "Farrow to Finish" budget to answer questions #41-45.

41. How much profit per litter is projected (to the nearest $)?
    a. $1,113
    b. $274
    c. $113
    d. $1,001

42. What price per pound is needed from market hog sales to just pay for <u>all costs</u>?
    a. $.48
    b. $.45
    c. $.43
    d. $.37

43. In this budget, how high could the price of corn go before income over all costs would be zero?
    a. $4.61
    b. $1.16
    c. $2.29
    d. $5.00

44. How much is the projected feed cost per pound of pork sold for this budget?
    a. $.227 per lb.
    b. $2.05 per lb.
    c. $61.73 per lb.
    d. $.182 per lb.

45. What percent of total projected costs are fixed?
    a. 19%
    b. 84%
    c. 0%
    d. 16%

Refer to the attached "Potatoes" budget to answer questions #46-50.

46. How much is the estimated returns over total costs (i.e. profit) per bed in this budget?
    a. $150.00
    b. $88.35
    c. $72.22
    d. $61.65

47. What is the approximate breakeven price needed to cover all costs if the crop yield is only 100 pounds per bed?
    a. $.74
    b. $.88
    c. $1.25
    d. $.65

48. If the cost of labor (for both planting and harvesting) is $12 per hour instead of $10, by how much will total variable costs per bed <u>increase</u>?
    a. $5.60
    b. $33.60
    c. $10.20
    d. $61.20

49. Assuming that the land, machinery and irrigation system will be owned anyway, how much revenue per bed would be needed to justify planting the crop?
    a. $88.35
    b. $77.78
    c. $10.57
    d. $61.65

50. How much would the projected total receipts be for a whole acre (43,560 sq. ft.) of potatoes instead of one 100’ x 4’ bed?
    a. $15,000
    b. $1,980
    c. $3,750
    d. $16,335

Section C. Risk Management

51. Retirement payments at old age (and to survivors) along with disability benefits and medical benefits are available mainly due to:
    a. the capital gains tax
    b. the social security tax
    c. Roth IRA’s
    d. gift taxes

52. A wider basis means there is greater difference between:
    a. the prices of two futures contracts
    b. two cash market prices
    c. a futures price and a cash market price
    d. a borrowing interest rate and a savings interest rate

53. Which of the following is generally recognized as a main advantage of incorporating a family farm business?
    a. less financial risk for the owners
    b. expanded markets
    c. lower production costs
    d. greater borrowing ability

54. The number of futures contracts traded during a given period of time is called:
    a. volume
    b. open interest
    c. options
    d. speculative interest

55. When is a cattle feeder farmer who has hedged future corn purchases most likely to receive a ‘margin’ call?
    a. cash corn prices increase
    b. corn futures prices increase
    c. corn futures prices decrease
    d. corn production costs increase

56. Which of the following would most likely warrant an increase in production by a firm?
    a. the firm is making money
    b. the firm's cash flow is positive
    c. the firm has low fixed costs
    d. the firm's marginal revenue exceeds the firm's marginal cost

57. If you buy a put option you have the:
    a. right to sell a futures contract
    b. obligation to make delivery on a futures contract
    c. right to buy a futures contract
    d. obligation to take delivery on a futures contract

58. Crop share and cash are alternative:
    a. rental agreements
    b. depreciation calculation methods
    c. inventory valuation methods
    d. loan repayment methods

59. In July a farmer sells November futures at $5.45 to hedge new crop soybeans. At harvest, the farmer buys back the contract for $4.85 and sells soybeans in the cash market for $4.75. What is the net price of soybeans received by the farmer (ignoring all commission fees).
    a. $5.45
    b. $5.15
    c. $5.35
    d. $5.85

60. The following corn producer who is most likely to benefit from rising corn prices is one who previously:
    a. sold corn futures
    b. sold corn call options
    c. bought corn put options
    d. sold corn with a cash forward contract

61. If a farm firm leases machinery, it:
    a. buys machinery on contract
    b. borrows money to repair machinery
    c. loans machinery to another producer
    d. rents machinery

62. Money to be received at some time in the future is worth:
    a. more the further into the future the money is to be received
    b. less the further into the future the money is to be received
    c. more the higher the interest rate is
    d. both b and c are true

63. Margins and commissions are typically paid by a hedger to:
    a. a lawyer
    b. another hedger
    c. a speculator
    d. a broker

64. If a futures option is NOT "in the money", the premium is:
    a. zero
    b. only time value
    c. equal to the strike price
    d. negative

65. If a farmer invests $10,000 today into a project with an expected 8% return per year, what will the value of the farmer's investment be at the end of 3 years from now?
    a. $10,240
    b. $12,400
    c. $12,597
    d. $10,800

66. A cooperative patronage refund paid to a producer member is typically:
    a. part cash and part deferred
    b. based on the producer's investment in the cooperative
    c. nontaxable income to the producer
    d. determined at the beginning of the cooperative's fiscal year

67. A cash market is also sometimes called
    a. a futures market
    b. a black market
    c. a spot market
    d. an inverse market

68. Which of the following is NOT a characteristic of a market described as perfect competition?
    a. easy entry by new firms
    b. firms are price setters
    c. firms produce identical or nearly identical products
    d. each firm is small relative to the market

69. The daily trading range for a given futures contract is the difference between the contract's:
    a. high and low prices for the day
    b. opening and closing prices for the day
    c. closing price yesterday and closing price today
    d. volume and open interest

70. Suppose a corn producer sells one corn futures contract (5,000 bushels) at $4.00 per bushel. Which of the following is most likely to be the amount of the "margin" money initially paid by this producer?
    a. $0
    b. $20,000
    c. $4,000
    d. $24,000

71. Which of the following is most likely to raise the premium paid for a put option?
    a. lower strike price
    b. increasing futures prices
    c. decreasing futures prices
    d. lower time value portion of the premiums

72. Corn futures contracts are sold at an exchange or market place known as the CBT. What do the letters CBT stand for?
    a. Corn and Bean Traders
    b. Chicago Brokerage Trade
    c. Cash and Brokerage Transactions
    d. none of the above is true

73. What is typically the opposite of a 'hedged' market position for a grain seller?
    a. short futures position
    b. speculative cash position
    c. an open interest position
    d. long put option position

74. Marketing to a subset of market consumers who are somewhat narrowly defined and who are believed to have special or unique needs is called this type of marketing:
    a. direct
    b. focus group
    c. niche
    d. discrimination

75. If a firm has quantity sales of its product increase 20% as a result of the firm lowering its product price by 10%, the firm's:
    a. total costs will decrease
    b. total revenue will increase
    c. total revenue will decrease
    d. breakeven level of output will decrease

Ending Net Worth Statement

Name FFA FARM Date 12/31/06

Farm Assets	Cost Value	Market Value	Farm Liabilities	Market Value
Current Assets			***Current Liabilities***	
Checking and savings accounts	$15,000	$15,000	Accounts payable	
Crops held for sale/feed	$184,940	$184,940	Farm taxes due	$9,500
Investment in growing crops	$3,000	$3,000	Current notes and credit lines	$56,000
Commercial feed on hand				
Prepaid expenses	$27,800	$27,800	Accrued interest - short	$1,600
Market livestock	$64,120	$64,120	- fixed	$47,584
Supplies on hand			Due in 12 months - fixed	$18,890
Accounts receivable	$9,900	$9,900		
Other current assets			Other current liabilities	
Total Current Assets	$304,760	$304,760	Total Current Liabilities	$133,574
Fixed Assets			***Fixed Liabilities***	
Unpaid coop. distributions			Notes and contracts remainder	$507,007
Breeding livestock	$117,100	$117,100	Machinery	
Machinery & equipment	$121,940	$150,000	Land	
Buildings/improvements	$34,295	$65,500		
Farmland	$658,000	$1,125,600		
Farm securities, certificates				
Other fixed assets			Other fixed liabilities	
Total Fixed Assets	$931,335	$1,458,200	Total Fixed Liabilities	$507,007
A) Total Farm Assets	**$1,236,095**	**$1,762,960**	**B) Total Farm Liabilities**	**$640,581**
C) Farm Net Worth			**Working Capital**	
D) Farm Net Worth Last Year	**$538,133**	**$1,025,833**	**Current Asset-to-Debt Ratio**	
E) Change in Farm Net Worth (C-D)			**Total Debt-to-Asset Ratio**	

Net Farm Income Statement

Name	FFA FARM	Year	2006

Income

Cash Income		*Income Adjustments*	Ending	Beginning
Sales of livestock bought for resale		Crops held for sale or feed	$184,940	$123,390
Sales of market livestock, grain, etc.	$289,777	Market livestock	$64,120	$75,962
Cooperative distributions paid		Accounts receivable and	$9,900	$9,900
Agricultural program payments	$9,900	other current assets		
Crop insurance proceeds		Unpaid coop. distributions		
Custom hire income		Breeding livestock	$117,100	$119,600
Other cash income	$4,588	Subtotal of Adjustments	$376,060	$328,851
Sales of breeding livestock	$14,361	Value of Home Used Production		
Total Cash Income	$318,626	**Gross Farm Revenue (e)**		**$365,834**

Expenses

Cash Expenses		*Expense Adjustments*	Beginning	Ending
Car and truck expenses		Investment in growing crops	$3,000	$3,000
Chemicals	$13,750	Commercial feed on hand	$1,250	
Conservation expenses		Prepaid expenses	$21,500	$27,800
Custom hire	$14,300	Supplies on hand		
Employee benefits			**Ending**	**Beginning**
Feed purchased	$1,503	Accounts payable		
Fertilizer and lime	$52,363	Farm taxes due	$9,500	$9,500
Freight, trucking		Accrued interest	$49,184	$33,891
Gasoline, fuel, oil	$17,258	Subtotal of Adjustments	$84,434	$74,191
Insurance	$7,265		g	h
Interest paid	$32,912	Depreciation		$16,465
Labor hired	$1,500	Gross Farm Expenses		$272,302
Pension and profit-share plans				
Rent or lease payments	$40,000	**Net Farm Income From Operations**		**$93,532**
Repairs, maintenance	$12,000			
Seeds, plants	$21,564	Sales of Farm Capital Assets		$10,000
Storage, warehousing		Cost Value of Items Sold		$8,000
Supplies purchased		Capital Gains or Losses		$2,000
Taxes (farm)	$9,500			
Utilities		**Net Farm Income**		
Vet. fees, medicine, breeding	$4,175			
Other cash expenses	$17,504			
Livestock purchased				
Total Cash Expenses	$245,594			

CASH FLOW BUDGET

Name: FFA FARM

Year: 2007

CASH INFLOWS Operating	Total for Year	January February	March April	May June	July August	September October	November December
Livestock income	96,004	0	0	20,161	0	0	75,843
Sales of crops	211,400	55,200	47,400	26,000	0	0	82,800
Other crop income	0	0	0	0	0	0	0
USDA payments	9,900	1,650	1,650	1,650	1,650	1,650	1,650
Custom hire income	0	0	0	0	0	0	0
Farm rents, interest	0	0	0	0	0	0	0
Other	4,588	0	1,147	1,147	1,147	1,147	0
Total operating income	321,892						
Sales of Capital Assets	5,000	0	0	5,000	0	0	0
Financing							
Total new short-term loans to receive	0	0	0	0	0	0	0
New term loans to receive	0	0	0	0	0	0	0
Nonfarm Income	0	0	0	0	0	0	0
Total Cash Inflows	**326,892**	**56,850**	**50,197**	**53,958**	**2,797**	**2,797**	**160,293**

Operating	Total for Year	January February	March April	May June	July August	September October	November December
Seed	17,295	0	8,648	8,648	0	0	0
Fertilizer and lime	55,496	0	22,198	22,198	11,099	0	0
Pesticides	14,450	0	0	5,780	5,780	2,890	0
Crop insurance	3,400	0	3,400	0	0	0	0
Drying fuel	0	0	0	0	0	0	0
Custom hire or machine rental	14,300	0	0	0	0	0	14,300
Other cash costs per acre	0	0	0	0	0	0	0
Purchased crops	0	0	0	0	0	0	0
Purchased livestock	0	0	0	0	0	0	0
Purchased feed	1,899	317	317	317	317	317	317
Health and veterinary	5,275	0	1,319	1,319	0	1,319	1,319
Marketing	2,775	0	0	583	0	0	2,192
Other cash costs per head	0	0	0	0	0	0	0
Real estate taxes	9,500	0	4,750	0	0	0	4,750
Cash rent	40,000	0	20,000	0	0	0	20,000
Hired labor	1,500	0	500	500	500	0	0
Repairs and upkeep	12,000	1,200	2,400	2,400	2,400	2,400	1,200
Fuel and lubrication	17,258	2,876	2,876	2,876	2,876	2,876	2,876
Other fixed expenses	0	0	0	0	0	0	0
Equipment lease payments	0	0	0	0	0	0	0
Total operating expenses	195,148						
Purchases of Capital Assets	22,000	22,000	0	0	0	0	0
Financing							
Accounts payable	0	0	0	0	0	0	0
Short term notes due	0	0	0	0	0	0	0
Term loan payments	93,361	76,214	17,147	0	0	0	0
Nonfarm Expenditures							
Family living expenses	0	0	0	0	0	0	0
Nonfarm investments	0	0	0	0	0	0	0
Total Cash Outflows		**102,607**	**83,555**	**44,620**	**22,972**	**9,802**	**46,954**

SUMMARY	Total for Year	January February	March April	May June	July August	September October	November December
Net Cash Flow	**16,383**	**(45,757)**	**(33,358)**	**9,338**	**(20,175)**	**(7,005)**	**113,339**
Beginning cash balance	15,000	15,000	(30,732)	(64,089)	(54,752)	(74,927)	(81,932)
Interest earned on cash balance	25	25	0	0	0	0	0
New operating loan received	0						
Repayment of operating loan	0						
Interest paid on oper. loan balance	0	0	0	0	0	0	0
Ending cash balance	31,408	(30,732)	(64,089)	(54,752)	(74,927)	(81,932)	31,408
Operating Loan Balance							
Beginning Balance	56,000	56,000	56,000	56,000	56,000	56,000	56,000
Ending Balance	56,000	56,000	56,000	56,000	56,000	56,000	56,000

POTATOES

Assumptions:

100' x 4' bed

	Quantity	Unit	$/Unit	Total
Receipts				
Potato sales	120	lbs	1.25	$150.00
Total Receipts				**$150.00**
Planting Year Costs				
Supplies				
Seed - cover crop	0.75	lbs	0.60	$0.45
Seed	20	lbs	0.35	7.00
Straw mulch	5	bales	2.50	12.50
Fertilization	10	lbs	0.15	1.50
Labor Costs				
Cover crop	0.05	hrs	10.00	0.50
Bed preparation	0.50	hrs	10.00	5.00
Fertilizer spreading	0.10	hrs	10.00	1.00
Planting	1.00	hrs	10.00	10.00
Mulching	0.50	hrs	10.00	5.00
Irrigation set up	0.25	hrs	10.00	2.50
Weeding	0.40	hrs	10.00	4.00
Other	0	lbs	0.00	0.00
Interest on Preplant Costs	49.45	dollars	0.035	1.73
Total Pre-Harvest Costs				**$51.18**
Harvest	**Quantity**	**Unit**	**$/Unit**	**Total**
Bags (5 lb)	24	bags	0.15	$3.60
Labor				
Harvest labor	2.00	hrs	10.00	20.00
Packaging	0.30	hrs	10.00	3.00
Other	0.00	hrs	0.00	0.00
Total Harvest Costs				**$26.60**
Total Variable Costs				
Per bed				$77.78
Per lb				0.65
Ownership Costs (Annual)				
Irrigation System				$1.14
Machinery				7.14
Land				2.29
Total Ownership Costs				**$10.57**
Total Costs (Annual)				
Per bed				**$88.35**
Per lb				**0.74**
Annual Returns Over Variable Costs				**$**_____
Annual Returns Over Total Costs				**$**_____

Swine Production - Farrow-to-Finish - One Litter

Production Efficiencies

Weaning average	9	pigs per litter
Pig death loss	4%	
Sow death loss	5%	
Litters per sow per year	2.1	
Litters in sow lifetime	4.0	

Income	**Price**	**Unit**		**Quantity**	**Unit**					**Total**
Market Hogs	$0.48	*per lb*	x	260	*lbs*	*x*	8.64	*head*	=	$1,078.27
Cull Sows	$0.35	*per lb*	x	400	*lbs*	*x*	0.25	*head*	=	$35.00
Gross Income										$1,113.27

Variable Costs	**Price**	**Unit**		**Quantity**	**Unit**			**Total**
Feed Costs								
Corn	$3.45	*per bu*	x	97	*bu*	=		$334.65
Soybean meal	$0.12	*per lb*	x	943	*lbs*	=		$113.16
Dried distiller grain	$0.05	*per lb*	x	267	*lbs*	=		$13.35
Vitamin & minerals	$0.45	*per lb*	x	35	*lbs*	=		$15.75
Vitamin & minerals	$0.30	*per lb*	x	95	*lbs*	=		$28.50
Pasture	$30.00	*per acre*	x	0.2	*ac*	=		$6.00
Feed Additives								$22.00
Other								$0.00
Total Feed Costs								$533.41
Veterinary and health								$34.00
Fuel, repairs, utilities								35.00
Bedding, marketing, miscellaneous								45.00
Other								0.00
Interest on variable costs	9%		x	5	*months*	=		24.28
Labor	$14.00	*per hour*	x	12	*hours*	=		168.00
Total Variable Costs								$839.69
Income over Variable Costs								$273.58

Fixed Costs								
Machinery, facilities								$100.00
Breeding costs, boar/semen								13.00
Replacement gilts	$155.00	*head*	x	0.26	*head*	=		40.69
Interest, insurance on breeding herd	10%		x	5.7	*months*	=		7.38
Total Fixed Costs								$161.07
Total All Costs								$1,000.76
Income over All Costs								$_____

Break-even selling price for variable costs $_____ per cwt
Break-even selling price for all costs $_____ per cwt

Team Participation Event – "Team" Portion (35 pts.) - KEY

2007 Iowa Vo-Ag/FFA
Farm Business Management Career Development Event

1. C Expected yields for corn in the second year of a CCS rotation increase from 47 bushels to 123 bushels, for a gain of 76 bushels. The corresponding yield increases are as follows for a) = 23, b) = 10, and d) = 30.

2. B Marginal product is calculated as change in output (e.g. corn yield) divided by change in input quantity (e.g. fertilizer).

3. D A producer would want to keep applying additional fertilizer as long as the additional cost of that fertilizer is less than the additional revenue from the additional corn produced. The additional cost depends on the price of N and the additional revenue depends on the price of corn.

4. A Let P_C = price of corn. Net revenue continuous corn for 2 years > net revenue CS for 2 years.
→ corn revenue – N costs – other costs > corn revenue – N costs – other costs + soybean revenues
→ $300\ P_C - 320\ (0.30) - 200 > 181\ P_C - 160\ (0.30) - 100 + 5.50\ (54.3)$
→ $300\ P_C - 96 - 200 > 181\ P_C - 48 - 100 + 298.65$
→ $119\ P_C > 446.65$
→ $P_C > 3.75$

5. C Expected net price = futures price sold – expected basis
= 3.80 - .35
= 3.45

6. B If an elevator buys corn at 40 cents under the Dec. corn futures price of $3.65, it has purchased the corn at $3.25. If it sells an equivalent amount of May corn futures at $3.75 with an expected basis of 10¢, the elevator can expect a net sale price of $3.65 and thus a 40 cent (3.65 – 3.25) gross return to storage.

7. C If the elevator sells March corn futures at $3.70 with an expected basis of $0.25, it has established an expected net selling price in March of $3.45 (= $3.70 - $0.25). If the elevator bids $3.40 it would expect a 5 cent per bushel margin (= $3.45 - $3.40).

Team Participation Event – "Individual" Portion KEY
2007 Iowa Vo-Ag/FFA
Farm Business Management Career Development Event
(Maximum possible pts: 5 per individual and 15 per team)

1. D
2. B
3. A
4. C
5. C

2007 Iowa Farm Business Management Career Development Event

INDIVIDUAL EXAM KEY

Section A. Economic Principles

1. C
2. A
3. A
4. D
5. C
6. B
7. B
8. B
9. D
10. B
11. A
12. C
13. D
14. A
15. C
16. D
17. C
18. A
19. C
20. D
21. C
22. B
23. A
24. A
25. C

Section B. Records and Analysis

26. B Market value net worth = total farm assets (market value) – total farm liabilities = $1,762,960 - $640,581 = $1,122,379

27. B Market value net worth increase = market value this year – market value net worth last year
$1,122,379 - $1,025,833 = $96,546

28. B Market value of farm land was $1,125,600 compared to cost value of $658,000.

29. D Debt-to-equity ratio = total farm liabilities divided by farm net worth (market value)
= $640,581 / $1,122,379 = 57%

30. C Working capital = current assets minus current liabilities
= $304,760 - $133,574 = $171,186

31. A Asset turnover ratio = gross farm revenue divided by total farm assets (market)
= $365,834 / $1,762,960 = 21%

32. C Net farm income = net farm income from operations + capital gains
= $93,532 + $2,000 = $95,532

33. B Net (to gross) farm income ratio
= net farm income / gross farm income
= 95,532 / 365,834 = 26%

34. A Sales of livestock, total for year, is $96,004.

35. C Operating loan needed = $45,757 - $15,000 cash on hand = about $31,000

36. A Under Cash Outflow, Purchases of Capital Assets, the amount budgeted is $22,000 in Jan.-Feb.

37. D A cash flow budget cannot project net farm income.

38. A Wages paid are a cash outflow and a farm expense.

39. B Projected ending cash balance is $31,408, so part of the beginning operating loan balance ($56,000) can be repaid, as well.

40. C Total operating expenses + purchases of capital assets + term loan payments
= $195,148 + $22,000 + $93,361 = $310,509 (or add total cash outflows by period)

41. C Profit per litter = gross income – total all costs = $1,113.27 - $1,000.76 = $113

42. C Price needed to breakeven = (total costs – income from cull sows) / lbs. sold of market hogs = ($1,000.76 - $35.00) / (260 lb. x 8.64 hd.) = $.43

43. A (Gross income – noncorn costs) / 97 bu. = (1,113.27 – 666.11) / 97 bu. = 4.61

44. A Projected feed cost per pound of pork sold = projected feed cost per litter / pounds sold per litter = $533.41 / [(260 lb. x 8.64 hd) + (400 lb. x .25 hd)] = $.227

45. D Fixed cost / total costs = $161.07 / $1,000.76 = 16%

46. D Estimated returns over total costs = total receipts – total costs = $150.00 - $88.35 = $61.65

47. B Breakeven price = total costs divided by quantity sold = $88.35 / 100 lb. = $.88

48. C Total hours of labor needed x $2.00 per hours = 5.1 hours x $2.00 = $10.20

49. B Only variable costs need to be covered ($77.78)

50. D One 100 x 4 bed is 400 square feet. One acre could contain (43,560 sq. ft. / 400 sq. ft.) = 108.9 beds
$150 per bed x 108.9 beds = $16,335

Section C. Risk Management

51. C
52. C
53. A
54. A
55. C
56. D
57. A
58. A
59. C
60. C
61. D
62. B
63. D
64. B
65. C
66. A
67. C
68. B
69. A
70. C
71. C
72. D
73. B
74. C
75. B