

**2022 Louisiana State FFA Farm Business Management  
Career Development Event**

**Name (Print)** \_\_\_\_\_

**Home Address (Print)** \_\_\_\_\_

\_\_\_\_\_

**Phone Number** \_\_\_\_\_

**High School** \_\_\_\_\_ **Team (Blue or Gold)** \_\_\_\_\_

**FFA Advisor** \_\_\_\_\_ **Grade (Fall 2022)** \_\_\_\_\_

**2022 LOUISIANA STATE FFA FARM BUSINESS MANAGEMENT  
CAREER DEVELOPMENT EVENT**

**Sponsored by the Mid-South Chapter of the American Society  
of Farm Managers and Rural Appraisers**

**Individual Awards:**

<b>First Place</b>	<b>\$100.00</b>
<b>Second Place</b>	<b>\$75.00</b>
<b>Third Place</b>	<b>\$50.00</b>
<b>Fourth Place</b>	<b>\$25.00</b>

**Administered by**

**Department of Agricultural Economics and Agribusiness  
Louisiana State University Agricultural Center**

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**LOUISIANA STATE FFA FARM BUSINESS MANAGEMENT  
CAREER DEVELOPMENT EVENT  
2022**

**Part I – Short Multiple Choice Section  
(100 Total Possible Points)**

**Select Best Answer Only**

1. Federal income tax rates in the United States increase with levels or brackets of income. What economic term is used to describe this type of tax rate structure?
  - a. Autocratic
  - b. Regressive
  - c. Progressive
  - d. Democratic
  
2. In the market for lemons, what determines the market price?
  - a. The quantity of lemons produced
  - b. The quantity of lemons purchased
  - c. The price of limes
  - d. The supply of lemons and the demand for lemons
  
3. Bill owns a how that has an assessed value of \$180,000 and an estimated market value of \$200,000. If the property tax rate on his house is 2%, how much will Bill have to pay in property tax on his house for the year?
  - a.  $0.02 * (\$200,000 - \$180,000)$
  - b.  $0.02 * \$180,000$
  - c.  $0.02 * (\$200,000 + \$180,000)$
  - d.  $0.02 * \$200,000$
  
4. Based on the economic concept of “time value of money”, \$1 today
  - a. Is worth less than \$1 five years from now
  - b. Is worth the same \$1 five years from now
  - c. May be worth more or less than \$1 five years from now and it will depend on the interest rate
  - d. Is worth more than \$1 five years from now
  
5. The foregone rental income to a farmer who operates his own farm instead of renting it would be known as:
  - a. An opportunity cost
  - b. A fixed cost
  - c. Hidden income
  - d. A liability

6. The part of a loan that is repaid during a year is what type of payment?
  - a. Interest
  - b. Principal
  - c. Mortgage
  - d. Installment
  
7. What are the two general types of inputs used in a production process?
  - a. Liquid and non-liquid
  - b. Short run and long run
  - c. Fixed and variable
  - d. Those supplied and those demanded
  
8. A current asset is one that:
  - a. Is currently being used by a business firm
  - b. Has been paid for by the business owner
  - c. Has been purchased within the past year by the business owner
  - d. Can be converted into cash fairly easily within one year
  
9. The ability to convert assets into cash is known as:
  - a. Solvency
  - b. Profitability
  - c. Liquidity
  - d. Elasticity
  
10. If Boudreaux Farms is breaking even, they are operating where:
  - a. Total revenues = total costs
  - b. Marginal costs = marginal revenue
  - c. Cash receipts = cash expenses
  - d. Assets = liabilities
  
11. Interest expense owed would show up on a balance sheet as the following?
  - a. A current asset
  - b. A long-term liability
  - c. A non-current liability
  - d. Accrued interest expense
  
12. If it is noted that apple prices are historically high despite the fact that per capita consumption of apples has been decreasing for many years, what is the most likely “economic” explanation of the higher apple prices?
  - a. The demand for apples has decreased
  - b. The supply of apples has decreased
  - c. The supply of apples has increased
  - d. There are more substitutes to apples available

13. A futures contract gives the **seller**:
  - a. An obligation to buy the corresponding cash commodity at the price sold
  - b. An option but not an obligation to sell the corresponding cash commodity at the price sold
  - c. An obligation to sell the corresponding cash commodity at the price sold
  - d. B and C as there is no difference between an option and an obligation
  
14. A business owned by its customers or patrons is called what?
  - a. A cooperative
  - b. An LLC
  - c. A non-profit organization
  - d. A joint venture
  
15. Corn sold by U.S. sellers to Japanese buyers would be regarded as:
  - a. Imports for the U.S.
  - b. Net exports for the U.S.
  - c. Exports for Japan
  - d. Exports for the U.S.
  
16. Normally a broker will require a hedger to deposit with them a certain amount of money in order to protect against a decline in the value of their account or hedged position due to adverse moves in the market price. What is this deposit normally called?
  - a. Reserve requirement
  - b. Margin money
  - c. Commission fee
  - d. Hedge premium
  
17. In marketing, "basis" is the difference between what?
  - a. A projected price and an actual price
  - b. Two current cash prices
  - c. A futures price and a cash price
  - d. Two current futures prices
  
18. Thibodeaux Farms is adding a new enterprise to the operation. This is an example of which of the following?
  - a. Consolidation
  - b. Diversification
  - c. Specialization
  - d. Liquidation

19. A strike price is what?
- The price at which a put option buyer can sell the underlying futures contract
  - The price at which a put option buyer can buy the underlying futures contract
  - The market equilibrium price
  - The premium paid for the purchase of an option
20. If a cotton farmer has hedged some future cotton sales with the futures market, what should they do if they are a true hedger when they sell their cotton in the cash market in the future?
- Let the cotton futures contract expire
  - Sell the futures contract initially bought
  - Purchase an offsetting call option
  - Buy back the futures contract sold
21. Jim has agreed to sell 5,000 bushels of soybeans to his nearby elevator on October 1<sup>st</sup> at a specified price. What is this type of marketing arrangement called?
- A traditional hedge sale
  - A basis contract
  - A cash forward contract
  - An options contract
22. Smith Farms had hedged with futures contracts some future cattle sales. The price Smith Farms expects to receive would be most impacted by which of the following?
- A bigger than expected basis
  - A bigger than expected decline in cash cattle prices
  - A bigger than expected decline in cattle futures prices
  - All of the above
23. If a corn farmer has total fixed costs per acre of \$300, variable costs of \$4.50 per bushel, and the price of corn is \$6.50 per bushel, what is the farmer's breakeven yield per acre (in bushels)?
- 200
  - 150
  - 175
  - 250
24. Which of the following is the most likely to decrease in value when Jones Farms experiences an increase in its yield of rice per acre?
- Total costs
  - Value per acre of land in the operation
  - The price of rice
  - Average fixed costs per barrels of rice produced

25. A corn producer has corn stored in on-farm storage bins. The farmer has two options: Option A is to sell the corn today for \$6.25 per bushel or Option B is to sell corn a year later for \$6.85 per bushel. Which of the following is true about the farmer's "best" pricing and marketing strategy?
- It depends on storage costs and interest rates
  - It depends on what it costs to produce that corn
  - Sell in a year because the price is higher
  - Sell today because the price a year from now cannot be guaranteed
26. Ignoring commission fees, if Bill has hedged some of his future soybean sales having sold November soybean futures at \$15.25 per bushel, what net price will he receive?
- \$15.25 per bushel regardless of the basis in November
  - \$15.55 per bushel if in November the basis is a positive \$0.30 per bushel
  - \$14.95 per bushel if in November the basis is a positive \$0.30 per bushel
  - It will depend on the cash price of soybeans in November
27. If Farmer Brown is projected to have revenues of \$700,000 and total costs of \$550,000, what would be the percentage increase in his profit (i.e. from \$150,000) if he did a "better" job of marketing so as to increase his revenues by 10% AND decrease his total costs by 10%?
- 25.0%
  - 70.5%
  - 83.3%
  - 50.0%
28. What average price (per pound) did Farmer Smith receive for his cotton sold this past year if he sold 50% of his production at \$0.90, 30% of his production at \$1.00, and 20% of his production at \$1.10?
- \$0.90
  - \$1.10
  - \$1.00
  - \$0.97
29. Which of the following is an example of variable cost?
- Taxes
  - Interest expense
  - Fertilizer
  - Insurance

30. If land is rented for shares of production instead of cash, what is the result?
- Less risk for landlord and tenant
  - More risk for landlord and tenant
  - Less risk for the landlord and more for the tenant
  - More risk for the landlord and less for the tenant
31. The main goal of a good marketing plan is to:
- Reduce risks
  - Do better than the average producer
  - Keep costs low
  - Understand national markets
32. The increase in corn yield decreases for each additional pound of nitrogen after 50 pounds applied per acre. This is an example of:
- Decreasing total production
  - Increasing marginal product
  - Diminishing marginal product
  - The risk of using too much fertilizer
33. If a farmer borrows \$20,000 for 5 months at 9% interest, how much interest is due at the end of 5 months?
- \$900
  - \$750
  - \$1,160
  - \$1,800
34. A farmer purchases 500 pound feeder steers for \$1.60 per pound and plans to sell the steers at 800 pounds. The farmer estimates that the total cost of gain will be \$0.95 per pound. The nearest breakeven price when the steers are sold at 800 pounds would be:
- \$1.00 per pound
  - \$2.55 per pound
  - \$1.36 per pound
  - \$0.95 per pound



35. A soybean producer decides to store soybeans in the local elevator for three months. The price at harvest is \$15.00 per bushel. The elevator charges \$0.04 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 \$75,000 at 8% interest while he stores the soybeans. What price must be received for the soybeans to break even and cover the storage and opportunity costs?
- \$15.47
  - \$15.17
  - \$15.30
  - \$15.00
36. If a farmer writes a check for \$8,000 to pay of the remainder of a tractor loan:
- Assets are reduced and equity declines
  - Liabilities are reduced and equity increases
  - Assets and liabilities are reduced and equity is unaffected
  - Assets, liabilities, and equity each decline
37. A farmer has a debt-to-equity ratio of 2:1. The current liabilities total \$50,000 and the non-current liabilities total \$90,000. What is the value of the assets?
- \$280,000
  - \$70,000
  - \$140,000
  - \$210,000
38. An increase in the value of the U.S. dollar relative to the currency of other countries should result in:
- More costly imports to the U.S.
  - Less costly imports to the U.S.
  - Increased exports to the U.S.
  - No effects on imports or exports
39. For maximum net returns, a farmer should substitute machinery for labor when:
- The annual costs of machine use are equal to the costs of labor
  - There is a limited supply of labor
  - The additional machine will increase labor efficiency
  - The value of labor saved is higher than the costs of the machine used

40. A local elevator quotes corn at \$0.15 over the December contract and will pick up the grain for free. A terminal quotes corn at \$0.20 over the December contract but it costs \$0.10 to haul it there. If the December contract sells for \$7.00 per bushel, where can you get the highest net price and how much is it?
- \$7.20 per bushel at the terminal
  - \$7.15 per bushel at the elevator
  - \$7.10 per bushel at the terminal
  - \$7.00 per bushel at the elevator
41. A soil sample shows that a producer needs to apply 60 units of nitrogen, 20 units of phosphorus, and 30 units of potassium per acre. If the producer is using a fertilizer with an analysis of 24-10-16, how many pounds of this fertilizer would the producer need to apply to make sure he is at least applying the suggested amounts of nitrogen, phosphorus, and potassium?
- 250 pounds
  - 200 pounds
  - 500 pounds
  - 60 pounds
42. Joh has purchased a tractor for \$215,000. It has a salvage value of 40% and a useful life of 8 years. What is the annual depreciation of the tractor using the straight-line depreciation method?
- \$20,000
  - \$18,125
  - \$16,125
  - \$17,500
43. The state of production that is considered the stage of the highest profitability is:
- Stage 3
  - Stage 2
  - Stage 1
  - It depends on the enterprise in question
44. A whole farm schedule of expected returns and expenses is a:
- Balance sheet
  - Partial budget
  - Depreciation schedule
  - Budget

45. When determining the effect of growing more acres of a crop, the cost most likely to change would be:
- Rent per acre
  - Crop insurance per acre
  - Fixed costs per acre
  - Operating costs per acre
46. If more farmers produce cotton to the point of oversupply, the result is:
- Increased demand
  - Higher prices
  - Lower prices
  - Steady prices
47. One acre of land is equal to:
- 43,560 sq ft
  - 41,200 sq ft
  - One square mile
  - None of the above
48. A farmer is considering purchasing another tract of land. He wants to determine the size of the property. According to the map he has seen, the land measures 550 ft east to west and 600 ft north to south. How many acres are contained in this tract of land?
- 1.5 acres
  - 7.6 acres
  - 330,000 acres
  - 600 acres
49. If the quantity demanded decreases by 5 percent as the price increases by 10 percent, the coefficient of price elasticity of demand equals and demand is said to be:
- 0.50, demand is elastic
  - 0.50, demand is inelastic
  - 2.0, demand is elastic
  - 2.0, demand is inelastic
  - 2.25
50. A producer is going to apply 1 pint per acre of a herbicide that costs \$250 per gallon. What is the herbicide cost per acre for using this herbicide?
- \$10.75 per acre
  - \$62.50 per acre
  - \$25.00 per acre
  - \$31.25 per acre

**PART II**

**PROBLEM SOLVING MULTIPLE CHOICE**

**150 Points**

**Complete all computations to two decimal places.  
Please read questions carefully.**



59. What percentage of total direct expenses does seed costs make up for the soybean operation?
- a. 26.58%
  - b. 23.08%
  - c. 15.04%
  - d. 11.50%
60. What would the producer's custom spray application costs be per acre if he had to have 6 aerial applications of 5 gallon work (App by Air – 5 gal)?
- a. \$7.00
  - b. \$28.00
  - c. \$42.00
  - d. \$33.60
61. How much operator labor cost does the producer have across all his corn acres?
- a. \$2,600
  - b. \$1,116
  - c. \$1,293
  - d. \$1,300
62. What is the breakeven price per bushel needed to cover total specified expenses plus a 10% return for the producer's corn operation assuming that actual yield was 180 bushels per acre?
- a. \$4.53
  - b. \$4.12
  - c. \$3.55
  - d. \$3.90
63. What is the breakeven yield to cover total direct (variable) costs for the producer's soybean operation assuming that the price for soybean was \$15.00 per bushel?
- a. 31.02 bushels
  - b. 10.17 bushels
  - c. 37.27 bushels
  - d. 48.38 bushels
64. Assuming a yield of 190 bushels and a price of \$6.75 per bushel, what would be the total estimated returns above total specified expenses for the entire corn crop?
- a. \$201,168
  - b. \$233,368
  - c. \$541,280
  - d. \$335,678
65. Assuming a yield of 50 bushels, a price of \$14.50 per bushel, and total specified expenses that were 20% percent higher than the projected level in the enterprise budget, what would be the total estimated returns above total specified expenses for the entire soybean crop?
- a. \$332,020.00
  - b. \$519,260.00
  - c. \$333,112.00
  - d. \$108,424.00



### C. PRE-HARVEST MARKETING HEDGE (12 Points)

A hedge can be used as a price risk management tool to lock-in a price for a commodity prior to marketing. Hedging prior to the selling date requires that the farmer be knowledgeable regarding the basis, defined as the difference between the local cash price and the futures market price closest to the date of selling the physical commodity.

Farmer Brown has been monitoring the market and sees there is significant amount of uncertainty and volatility in the corn market. He has corn that he expects to harvest in August and believes there is equal chances that prices will go up or go down by the time we get to August. Current futures prices are favorable and Farmer Brown projects that he would be profitable if he protected those current prices. Therefore, he is considering hedging by selling a September 2022 futures contract. But because there is an equal chance that prices could go up, he is also considering purchasing a September 2022 call option. The September 2022 futures contract is trading for \$7.47 per bushel while a September 2021 call option with a \$7.50 strike price is trading at \$0.54 per bushel. It will cost Farmer Brown \$0.01 per bushel in commission fees for either selling the futures contract or buying the call option. Farmer Brown expects the basis in when selling to be \$0.20 per bushel above the futures price.

73. What is Farmer Brown's expected target price (expected selling price) for his corn if he sells the September 2022 futures contract?
- |                 |                 |
|-----------------|-----------------|
| a. \$7.47 / bu. | c. \$7.66 / bu. |
| b. \$7.80 / bu. | d. \$7.67 / bu. |
74. Assume that in August, Farmer Brown sells his corn crop at the local elevator for \$6.75 per bushel. On the day he sold the crop, the September 2022 futures contract was trading at \$6.40 per bushel. What is Farmer Brown's net selling price for his corn if he hedged by selling the September 2022 futures contract?
- |                 |                 |
|-----------------|-----------------|
| a. \$7.81 / bu. | c. \$6.75 / bu. |
| b. \$7.82 / bu. | d. \$7.66 / bu. |
75. If Farmer Brown would have also purchased a call option when he sold the futures contract, what would be the profit or loss he would have made per bushel when he offset that option position? Assume that he would have offset his option position on the same day that he offset his futures position. On that day, the September 2022 futures contract was trading at \$6.40 per bushel and the September 2022 call option with a \$7.50 strike price was trading for \$0.01 per bushel.
- |                        |                        |
|------------------------|------------------------|
| a. \$0.55 / bu. loss   | c. \$0.55 / bu. profit |
| b. \$0.54 / bu. profit | d. \$0.54 / bu. loss   |
76. What would Farmer Brown's net selling price have been if he sold the futures contract and purchased the call option at the same time?
- |                 |                 |
|-----------------|-----------------|
| a. \$7.28 / bu. | c. \$7.81 / bu. |
| b. \$7.66 / bu. | d. \$7.27 / bu. |



#### D. EQUIPMENT COST ANALYSIS (15 Points)

Farmer John is taking on an additional 500 acres of sugarcane. The new acres are too much for him to harvest with his existing harvester and so he needs to determine if he is better off purchasing a new harvester or allowing the mill's harvest group to harvest this new cane for him. The harvest group offers him two different options for charging him to harvest the cane. The first option is to charge him a flat \$7.00 per ton harvested. The second option is to charge him a flat \$250 per acre. Finally, Farmer John has looked into what it would cost for him to purchase and operate another harvester. Based on his best figures he estimates that his annual fixed costs would be \$40,000 per year and his annual variable costs (including labor) would be \$80,000 per year for the additional acreage.

77. What is the total cost per acre associated with purchasing the new harvester just to harvest the new acres of sugarcane?
  - a. \$113.33 / acre
  - b. \$230.00 /acre
  - c. \$240.00 / acre
  - d. \$275.47 / acre
  
78. What would be the total costs Farmer John would owe the harvest group if he chose the \$7.00 per ton charge and his average yield was 40 tons per acre?
  - a. \$280.00 / acre
  - b. \$281.25 / acre
  - c. \$284.00 / acre
  - d. \$218.50 / acre
  
79. How much higher or lower would Farmer John's harvest costs per acre be if he purchased a new harvester versus having the custom group harvest it at \$7.00 per ton and assuming his average yield is 43 tons per acre.
  - a. \$18.00 / acre lower
  - b. \$61.00 / acre lower
  - c. \$18.00 / acre higher
  - d. \$128.33 / acre higher
  
80. If Farmer John's expected yield was 38 tons per acre, which of these would be preferred if all he is concerned about is getting the lowest cost per acre?
  - a. Harvest Group @ \$7.00 per ton
  - b. Buy/own the harvester
  - c. Harvest Group @ \$250 per acre
  - d. None of the above
  
81. What would the answer to Question 80 be if the additional acres were 400 acres instead of 500 acres but all other information was the same?
  - a. Harvest Group @ \$7.00 per ton
  - b. Buy/own the harvester
  - c. Harvest Group @ \$250 per acre
  - d. None of the above

## E. FINANCIAL ANALYSIS (12 Points)

Use Farmer Smith's Net Worth Statement provided to answer questions 82 – 85.

FARMER JONES NET WORTH STATEMENT (AS OF JANUARY 1, 2022)				
FARM ASSETS	Cost Value	Market Value	FARM LIABILITIES	Market Value
Current Assets			Current Liabilities	
Checking and savings accounts	\$15,000	\$15,000	Accounts payable	\$67,000
Crops held for sale/feed	\$247,000	\$247,000	Farm taxes due	\$11,450
Investment in growing crops	\$3,000	\$3,000	Current notes and credit lines	\$230,554
Commercial feed on hand	\$0	\$0	Accrued interest - short	\$9,216
Prepaid expenses	\$45,000	\$45,000	Accrued interest - fixed	\$37,388
Market livestock	\$57,150	\$57,150	Due in 12 months - fixed	\$74,059
Supplies on hand	\$0	\$0		
Accounts receivable	\$10,000	\$10,000		
Other current assets	\$0	\$0	Other current liabilities	\$0
<b>Total current Assets</b>	<b>\$377,150</b>	<b>\$377,150</b>	<b>Total Current Liabilities</b>	<b>\$429,667</b>
Fixed (Non-Current) Assets			Fixed (Non-Current) Liabilities	
Unpaid Co-op distributions	\$5,000	\$5,000	Notes and contracts remainder (Sched. Q)	\$703,028
Breeding livestock	\$34,750	\$45,175	Machinery	\$0
Machinery & equipment	\$407,590	\$427,970	Land	\$0
Buildings/improvements	\$467,000	\$677,150		
Farmland	\$385,000	\$616,000		
Farm securities, certificates	\$0	\$0		
Other fixed assets	\$0	\$0	Other fixed liabilities	\$0
<b>Total Fixed (Non-Current) Assets</b>	<b>\$1,299,340</b>	<b>\$1,771,295</b>	<b>Total Fixed (Non-Current) Liabilities</b>	<b>\$703,028</b>
<b>TOTAL FARM ASSETS</b>	<b>\$1,676,490</b>	<b>\$2,148,445</b>	<b>TOTAL FARM LIABILITIES</b>	<b>\$1,132,695</b>
FARM NET WORTH	\$543,795	????		
FARM NET WORTH LAST YEAR	\$1,060,869	\$1,761,680		
CHANGE IN FARM NET WORTH	-\$517,074	-\$745,931		

82. What was this farm's net worth on January 1, 2022, using **market** values for their assets?
- a. \$1,676,490                      c. \$1,015,750  
b. \$543,795                         d. \$1,761,680
83. Using "cost" values, what is the farm's ratio of total debt to equity?
- a. 2.08                                 c. 1.12  
b. 0.36                                 d. 0.65
84. How much is this farm's working capital?
- a. \$587,955                         c. \$429,667  
b. \$377,150                         d. \$703,028
85. What is the farm's current ratio?
- a. 0.57                                 c. 1.51  
b. 1.76                                 d. 0.88

## F. INCOME STATEMENT ANALYSIS (15 Points)

You have been asked to prepare an income statement for 2021 for Smith's Nursery and Landscaping Company. Mr. Smith has provided you the following table to answer Questions 86 – 90.

Plant Sales	\$534,942	Fuel Expenses	\$79,674
Income Tax Expense	\$49,188	Equipment Depreciation Expenses	\$59,572
Cost of Goods Sold	\$114,574	Accessories Sales	\$15,378
Lawn Care Fee Income	\$102,409	Rent	\$11,917
Hourly Labor Expense	\$69,513	Insurance	\$10,375
Advertising Expense	\$20,628	Landscape Fee Income	\$133,452
Soil Sales	\$25,225	Fertilizer Sales	\$46,141

86. What is the total income for the revenue section of the income statement?
- a. \$102,409                      c. \$534,942  
b. \$848,125                      d. \$742,973
87. What are the total operating (variable) expenses?
- a. \$169,815                      c. \$195,450  
b. \$105,000                      d. \$90,000
88. What are the total fixed expenses?
- a. \$196,250                      c. \$143,500  
b. \$81,864                      d. \$112,500
89. What is net income (after taxes)?
- a. \$426,875                      c. \$112,075  
b. \$442,106                      d. \$300,000
90. What is the depreciation expense ratio (depreciation divided by gross revenue)?
- a. 0.01                              c. 0.08  
b. 0.15                              d. 0.09

**G. LOAN AMORTIZATION SCHEDULE (15 Points)**

An agricultural producer is going to purchase a piece of equipment. The agreed upon sell price for the equipment is \$325,000 but the producer is going to receive \$65,000 for his trade-in and he has another \$30,000 in cash for a down payment. The dealership is going to allow him to borrow the money he needs to purchase the piece of equipment for an APR (annual percentage rate) of 9% for 10 years. Complete the following loan amortization schedule by selecting the value that is missing from the table.

Year	Beginning Balance	Annual Payment	Interest Payment	Principal Payment	Ending Balance
1	???	???	\$20,700.00	\$15,138.62	\$214,861.38
2	\$214,861.38	\$35,838.62	\$19,337.52	\$16,501.10	\$198,360.28
3	\$198,360.28	\$35,838.62	\$17,852.43	\$17,986.20	\$180,374.09
4	\$180,374.09	\$35,838.62	???	???	\$160,769.13
5	\$160,769.13	\$35,838.62	\$14,469.22	\$21,369.40	\$139,399.74
6	\$139,399.74	\$35,838.62	\$12,545.98	\$23,292.64	???
7	???	\$35,838.62	\$10,449.64	\$25,388.98	\$90,718.11
8	\$90,718.11	\$35,838.62	\$8,164.63	\$27,673.99	\$63,044.12
9	\$63,044.12	\$35,838.62	\$5,673.97	\$30,164.65	\$32,879.47
10	\$32,879.47	\$35,838.62	\$2,959.15	\$32,879.47	\$0.00

91. How much money did the producer originally borrow to purchase the equipment?
  - a. \$400,000
  - b. \$230,000
  - c. \$325,000
  - d. \$295,000
  
92. What is the amount of total payment in year 1?
  - a. \$20,700.00
  - b. \$15,138.62
  - c. \$35,838.62
  - d. \$23,600.00
  
93. In which year does the portion of the payment applied to the principal first exceed the interest payment?
  - a. Year 2
  - b. Year 1
  - c. Year 5
  - d. Year 3
  
94. What is the amount of interest paid in year 4?
  - a. \$16,233.67
  - b. \$14,042.74
  - c. \$8,267.34
  - d. \$21,118.86
  
95. What is the ending balance at the end of year 6?
  - a. \$139,399.74
  - b. \$116,107.09
  - c. \$35,838.62
  - d. \$21,118.86

## H. PARTIAL BUDGETING (15 Points)

A cattle producer has been purchasing all the hay he needs each year for his cattle operation. He needs 100 bales of hay to meet the needs of his operation and has, historically, been able to purchase the hay for around \$40 per bale. This year, with the increased costs of fuel and fertilizer and with the drought conditions, the producer has heard that it will likely cost \$60 per bale to purchase hay. He has access, free of charge, to 50 acres that he could make his own hay. He recently found a very good baler that he could purchase for \$30,000. Other than the baler, he has all the other equipment he would need to produce his own hay. He projects that he could produce about 3 bales per acre on the 50 acres each year and would be able to sell any hay that he did not need for his own cattle operation for \$50 per bale. He has estimated that his annual ownership cost for the baler would be about \$7,400 and his operating expenses (including labor) to make his own hay would be about \$140 per acre. Based on this information, he would like to develop a partial budget to determine if making his own hay would be more profitable than purchasing all his hay.

PARTIAL BUDGETING				
Problem: Purchasing Hay versus Producing Own Hay				
		VALUE		VALUE
Additional Costs			Additional Revenue	
Annual Ownership Costs		\$7,400.00	Hay Sales	????
Annual Operating Costs		????		
Reduced Revenue			Reduced Costs	
None		\$0.00	Purchased Hay	\$6,000.00
A. Total Additional Costs and Reduced Revenue		????	B. Total Additional Revenue and Reduced Costs	
			Net Change in Profit (B - A)	
			????	

96. What would be the producers annual operating costs associated with producing his own hay?
- a. \$5,000
  - b. \$15,000
  - c. \$7,000
  - d. \$3,000
97. What would be the total additional costs and reduced revenue the producer would experience if he produced his own hay?
- a. \$5,000
  - b. \$13,900
  - c. \$3,750
  - d. \$14,400

98. If the producer produced his own hay, he would produce more hay than he needs for his cattle operation. Therefore, he could generate additional revenue by selling that extra hay. How much revenue would the producer generate if he sold extra hay that he produced?
- a. \$5,250
  - b. \$2,500
  - c. \$5,000
  - d. \$8,750
99. What would be the total additional revenue and the reduced costs the producer would experience if he produced his own hay?
- a. \$5,250
  - b. \$8,250
  - c. \$3,750
  - d. \$8,500
100. What would be the net change in profit if the producer stopped purchasing his hay and started producing his own hay?
- a. A \$5,900 increase
  - b. A \$500 increase
  - c. A \$5,900 decrease
  - d. A \$500 decrease

Table 6.A Estimated costs per Acre  
 Corn, RR, 12-Row Equipment, 38 inch rows, irrigated,  
 Alluvial Soil, Louisiana, 2022.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CUSTOM SPRAY					
App by Air ( 5 gal)	appl	7.00	4.0000	28.00	_____
App by Air ( 3 gal)	appl	5.60	1.0000	5.60	_____
GIN/DRY					
Dry Corn	bu	0.19	190.0000	36.10	_____
FERTILIZERS					
LA Phosphate	lb	0.65	30.0000	19.50	_____
LA Potash	lb	0.58	60.0000	34.80	_____
LA Nitrogen	lb	0.76	210.0000	159.60	_____
Haul Corn	bu	0.23	190.0000	43.70	_____
HERBICIDES					
Glyphosate Plus 4L	pt	4.95	2.0000	9.90	_____
2,4-D Amine 4	pt	1.81	1.0000	1.81	_____
Valor WP	oz	4.38	1.0000	4.38	_____
Roundup WeatherMax	oz	0.19	66.0000	12.54	_____
Atrazine 4L	pt	2.25	5.0000	11.25	_____
Select 2EC	oz	0.69	6.0000	4.14	_____
INSECTICIDES					
Karate Z	oz	1.41	2.1300	3.00	_____
Baythroid 2	oz	2.58	2.1300	5.50	_____
IRRIGATION SUPPLIES					
Roll-Out Pipe	ft	0.24	33.0000	7.92	_____
SEED/PLANTS					
Corn Seed RR	thous	3.38	35.0000	118.30	_____
SERVICE FEE					
Lime (Spread)	ton	59.00	0.3300	19.47	_____
Digital Ag Fee	acre	8.50	1.0000	8.50	_____
Soil Test	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Harvesters	hour	15.30	0.0851	1.30	_____
IRRIGATION LABOR					
Implements	hour	9.06	0.0062	0.06	_____
LA Hired Labor					
Implements	hour	11.88	0.1175	1.40	_____
Tractors	hour	11.88	0.7998	9.50	_____
LA Irrigation Labor					
Special Labor	hour	11.88	0.1500	1.79	_____
DIESEL FUEL					
Tractors	gal	2.84	7.6894	21.84	_____
Harvesters	gal	2.84	1.2047	3.42	_____
Roll-Out Pipe Irr.	gal	2.84	8.5535	24.30	_____
REPAIR & MAINTENANCE					
Implements	Acre	10.33	1.0000	10.33	_____
Tractors	Acre	4.92	1.0000	4.92	_____
Harvesters	Acre	3.47	1.0000	3.47	_____
Roll-Out Pipe Irr.	Acre	7.16	1.0000	7.16	_____
INTEREST ON OP. CAP.	Acre	11.61	1.0000	11.61	_____
TOTAL DIRECT EXPENSES				638.41	_____
FIXED EXPENSES					
Implements	Acre	15.52	1.0000	15.52	_____
Tractors	Acre	28.99	1.0000	28.99	_____
Harvesters	Acre	12.87	1.0000	12.87	_____
Roll-Out Pipe Irr.	Acre	45.43	1.0000	45.43	_____
TOTAL FIXED EXPENSES				102.81	_____
TOTAL SPECIFIED EXPENSES				741.22	_____

Table 5.A Estimated costs per Acre  
 Soybeans, RR, 12-row equipment, 20-inch rows, irrigated  
 alluvial soils, Northeast Louisiana, 2022.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
CUSTOM SPRAY					
App by Air ( 5 gal)	appl	7.00	3.0000	21.00	_____
App by Air ( 3 gal)	appl	5.60	5.0000	28.00	_____
HARVEST AIDS					
Gramoxone Inteon	oz	0.19	16.0000	3.04	_____
FERTILIZERS					
LA Phosphate	lb	0.65	50.0000	32.50	_____
LA Potash	lb	0.58	50.0000	29.00	_____
FUNGICIDES					
Quadris	oz	2.72	6.0000	16.32	_____
Stratego	pt	77.00	0.6250	48.13	_____
HERBICIDES					
Roundup WeatherMax	oz	0.19	66.0000	12.54	_____
2,4-D Amine 4	pt	1.81	1.0000	1.81	_____
Valor WP	oz	4.38	2.0000	8.76	_____
Dual II Magnum	pt	15.00	1.0000	15.00	_____
Flexstar HL	pt	6.88	1.0000	6.88	_____
INSECTICIDES					
Brigade EC	pt	9.60	0.7500	7.20	_____
Prevathon	oz	1.05	16.0000	16.80	_____
Besiege	oz	1.95	10.0000	19.50	_____
Surfactant	pt	1.75	1.0000	1.75	_____
IRRIGATION SUPPLIES					
Roll-Out Pipe	ft	0.24	33.0000	7.92	_____
SEED/PLANTS					
Soybean Seed RR	lb	1.40	50.0000	70.00	_____
SERVICE FEE					
Lime (Spread)	ton	59.00	0.3300	19.47	_____
Digital Ag Fee	acre	8.50	1.0000	8.50	_____
Soil Test	acre	10.00	0.3300	3.30	_____
CUSTOM HARVEST/HAUL					
Haul Soybeans	bu	0.27	55.0000	14.85	_____
OPERATOR LABOR					
Harvesters	hour	15.30	0.0851	1.30	_____
IRRIGATION LABOR					
Implements	hour	9.06	0.0062	0.06	_____
LA Hired Labor					
Implements	hour	11.88	0.1586	1.89	_____
Tractors	hour	11.88	0.6473	7.69	_____
LA Irrigation Labor					
Special Labor	hour	11.88	0.1500	1.79	_____
DIESEL FUEL					
Tractors	gal	2.84	6.2667	17.80	_____
Harvesters	gal	2.84	1.2047	3.42	_____
Roll-Out Pipe Irr.	gal	2.84	4.8877	13.86	_____
REPAIR & MAINTENANCE					
Implements	Acre	6.43	1.0000	6.43	_____
Tractors	Acre	4.05	1.0000	4.05	_____
Harvesters	Acre	3.47	1.0000	3.47	_____
Roll-Out Pipe Irr.	Acre	5.36	1.0000	5.36	_____
INTEREST ON OP. CAP.	Acre	5.98	1.0000	5.98	_____
TOTAL DIRECT EXPENSES				465.37	_____
FIXED EXPENSES					
Implements	Acre	11.39	1.0000	11.39	_____
Tractors	Acre	23.93	1.0000	23.93	_____
Harvesters	Acre	12.87	1.0000	12.87	_____
Roll-Out Pipe Irr.	Acre	45.43	1.0000	45.43	_____
TOTAL FIXED EXPENSES				93.62	_____
TOTAL SPECIFIED EXPENSES				558.99	_____



**2022 FFA Farm Business Management CDE - Answer Key**

Question	Answer		Question	Answer		Question	Answer		Question	Answer		Question	Answer
1	C		21	C		41	A		11	D		31	C
2	D		22	A		42	C		12	A		32	C
3	B		23	B		43	B		13	A		33	A
4	D		24	D		44	D		14	C		34	B
5	A		25	A		45	C		15	D		35	D
6	B		26	B		46	C		16	D		36	D
7	C		27	C		47	A		17	B		37	A
8	D		28	D		48	B		18	C		38	B
9	C		29	C		49	B		19	B		39	B
10	A		30	D		50	D		20	D		40	C
11	D		31	A		1	B		21	A		41	B
12	B		32	C		2	A		22	D		42	C
13	C		33	B		3	D		23	C		43	D
14	A		34	C		4	B		24	A		44	B
15	D		35	A		5	A		25	D		45	C
16	B		36	C		6	C		26	D		46	C
17	C		37	B		7	D		27	C		47	D
18	B		38	B		8	B		28	A		48	B
19	A		39	D		9	C		29	B		49	D
20	D		40	B		10	C		30	B		50	C