

**2015 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 2015)** _____

**2015 LOUISIANA STATE FFA FARM BUSINESS MANAGEMENT
CAREER DEVELOPMENT EVENT**

Administered by

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

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250	TOTAL	

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

2015

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

Select Best Answer Only

1. Mr. Holmes wants to calculate the yield from his soybean crop needed to breakeven given his expected expenses of \$570/acre. What other piece of information will Mr. Holmes need to calculate breakeven yield per acre?
 - a. Net return per acre
 - b. Value of current assets per acre
 - c. Output price
 - d. Total acres harvested
 - e. None of the above

2. You are considering selling a feeder cattle futures contract to protect against downside price risk on the calves you will sell later this year. How many pounds of feeder cattle are contained in one futures market contract?
 - a. 5,000 bushels
 - b. 25,000 pounds
 - c. 40,000 pounds
 - d. 50,000 pounds
 - e. None of the above

3. You are considering purchasing a quarter section of land. How many acres would you be purchasing?
 - a. 80 acres
 - b. 160 acres
 - c. 240 acres
 - d. 640 acres
 - e. None of the above

4. You have purchased a quarter section of land, but there is no perimeter fencing for the cattle in your operation. How much perimeter fencing is needed for the land you have purchased?
 - a. 1.0 mile
 - b. 1.5 miles
 - c. 2.0 miles
 - d. 2.5 miles
 - e. None of the above

5. What is the name of the USDA agency primarily responsible for providing information on private and public issues related for agriculture, food, the environment, and rural development?
 - a. Agricultural Marketing Service
 - b. Economic Research Service
 - c. Farm Service Agency
 - d. National Agricultural Statistics Service
 - e. None of the above

6. If a machine's use is decreased from 500 acres to 400 acres per year, which of the following is true?
 - a. Total fixed cost will decline.
 - b. Total variable cost will increase.
 - c. Variable costs per acre will increase.
 - d. All of the above is true.
 - e. None of the above is true.

7. What is the largest investment cost associated with ranching?
 - a. Cattle
 - b. Equipment/Machinery
 - c. Fencing
 - d. Land
 - e. None of the above

8. Which of the following is not considered a current asset?
 - a. Accounts receivable
 - b. Cash
 - c. Growing crops
 - d. Land
 - e. None of the above

9. Depreciation is an annual, noncash expense that recognizes the amount by which an asset loses value due to use, age, and what other factor?
 - a. Amortization
 - b. Diminishing returns
 - c. Foreclosure
 - d. Technical obsolescence
 - e. None of the above

10. Which of the following are methods to calculate annual depreciation expenses?
 - a. Declining Balance Method
 - b. Modified Accelerated Cost Recovery System
 - c. Straight Line Method
 - d. All of the above
 - e. None of the above

11. Mr. Silver sells 12 calves weighing 530 pounds at his local stockyard for \$225/cwt. The stockyard charges 2.5% sales commission, yardage fees of \$3 per head. In addition, the stockyard collects the beef check-off fee of \$1.50/head. What is the net amount received by Mr. Silver?
 - a. \$1,158.19
 - b. \$1,159.69
 - c. \$13,898.25
 - d. \$13,916.25
 - e. None of the above

12. It is unprofitable for a farmer to borrow money to expand his farming operation when the borrowed money:
 - a. Can be secured at a low interest rate.
 - b. Can improve the level of production.
 - c. Returns less than the cost of borrowing the money.
 - d. Will decrease the volume of business.
 - e. None of the above.

13. You are currently a sole proprietorship but are considering a change in business structure to a family farm corporation. Which of the following is not an advantage of the proposed change?
 - a. Continuous existence
 - b. Credit availability
 - c. Less regulation
 - d. Limited liability
 - e. None of the above

14. A decrease in equity (net worth) can result from:
 - a. High farm profits
 - b. Increased assets
 - c. Increased farm inventory values
 - d. Increased liabilities
 - e. None of the above.

15. A surplus of \$1,500 at the end of August in a monthly cash flow analysis results in which of the following?
- An unprofitable farm organization
 - Cash reserves for future months when the analysis is negative
 - Federal tax refunds
 - Increased borrowing costs
 - None of the above

The following information is needed for questions 16 and 17.

<u>Tomatoes</u>	<u>Green Beans</u>	<u>Cucumbers</u>	<u>Lettuce</u>
75	60	45	80
55	55	30	65
50	30	25	50
30	25	20	45
25	20	20	40
25	20	15	35

16. Mr. Newton is able to find only six laborers to harvest his tomatoes, green beans, cucumbers, and lettuce. If the above represent the marginal returns from each laborer devoting one additional day to harvesting any of the four vegetable crops, how should Mr. Newton use the six laborers?
- Six workers should be used to harvest tomatoes and lettuce in equal amounts.
 - Two laborers each to tomatoes and lettuce and one laborer each to cucumbers and green beans.
 - Two laborers each to tomatoes, green beans, and lettuce.
 - All labor should be devoted to harvesting cucumbers.
 - None of the above.
17. Again, using the table above question 16 which represents the marginal returns from one laborer devoting an additional day to harvesting any of the four vegetable crops. Assuming that hiring each additional laborer costs \$50 per day, how many total laborers would be hired by Mr. Newton?
- Four
 - Five
 - Seven
 - Eight
 - None of the above

18. Mr. Darnell has the opportunity to rent land to plant soybeans, but he will need a loan to pay the landowner the agreed rental rate. What type of loan will Mr. Darnell need to obtain from his lender?
- Intermediate term loan
 - Long term loan
 - Mortgage
 - Operating loan
 - None of the above
19. If consumer demand increased for beef due to non-price factors, and beef supplies are unchanged, the price of beef will:
- Decrease
 - Increase
 - More information is needed to draw a conclusion
 - No change to the beef price
 - None of the above
20. Economies of scale exist when:
- An additional input results in a 25% increase in output
 - An additional input results in a 50% increase in output
 - An additional input results in a 100% increase in output
 - An additional input results in an 125% increase in output
 - None of the above
21. Given the following supply and demand schedule for soybeans, what is the equilibrium price of soybeans?

<u>Price (per bushel)</u>	<u>Quantity Demanded (Millions of bushels)</u>	<u>Quantity Supplied (Millions of bushels)</u>
\$10.00	4,500	3,000
\$10.25	4,000	3,250
\$10.50	3,500	3,500
\$10.75	3,000	3,750
\$11.00	2,500	4,000

- \$10.00/bu
- \$10.25/bu
- \$10.50/bu
- \$10.75/bu
- \$11.00/bu

22. A price ceiling is:
- A legally imposed price below the equilibrium price level.
 - Highest price ever received for a good.
 - Highest price received during a day of trading for a specific commodity
 - Similar to a breakeven price.
 - None of the above.
23. What is the difference between a futures and cash price for a good commonly referred to as?
- Basis
 - Bid price
 - Marketing margin
 - Market quotation
 - None of the above
24. What does the difference between a futures and cash price for a good commonly reflect?
- Diversification
 - Equilibrium price
 - Marketing margins
 - Transportation costs
 - None of the above
25. Mr. Coffey had total assets of \$925,000, of which \$800,000 were classified as current. On December 31, 2014, Mr. Coffey's net worth was \$792,000. What were his total liabilities?
- \$8,000
 - \$125,000
 - \$133,000
 - \$933,000
 - None of the above
26. The Tyler family are currently contract chicken farmers for a vertically integrated firm. They are considering adding cattle and haying enterprises. If the family were to do this, this would be an example of:
- Diversification
 - Hedging
 - Horizontal integration
 - Specialization
 - None of the above

27. Mr. Vessels is a beef producer who is concerned about price risk with the cattle he is about to sell. He will not be selling enough cattle to use a futures contract. Which USDA agency has insurance programs to help manage his price risk?
- Agricultural Marketing Service
 - Economic Research Service
 - National Agricultural Statistics Service
 - Risk Management Agency
 - None of the above
28. Ms. Bueller is considering buying a parcel of land and has recently said that the land “is a steal”. What does she mean when she says this?
- The present value of expected income over time that the land will produce is greater than the asking price.
 - The price is high.
 - She doesn’t have cash reserves for a down payment.
 - She doesn’t have sufficient credit to buy.
 - None of the above
29. Ms. Harned needs \$50,000 for an operating loan which she obtains on January 1, 2015. If she repays the principal on December 31, 2015, she will pay \$2,833.33 in interest expenses. What annual interest rate is her lender charging?
- 4.25%
 - 5.67%
 - 8.50%
 - 10.41%
 - None of the above
30. Ms. Harned is considering purchasing a tractor that would cost \$75,000 after a 25% down payment. The equipment dealership offers a 4% interest rate for 5 years. What is the interest expense in the first year of the loan?
- \$3,000
 - \$4,000
 - \$16,847.03
 - \$22,462.71
 - None of the above

31. Mr. Henning anticipates needing \$30,000 in five years for a down payment on an equipment purchase. If he deposits a lump sum of cash in a savings account today earning 5% interest compounded annually, how much he needs to deposit today to have the needed \$30,000 five years from now? Assume no other contributions are made to the account while it is earning interest.
- \$5,536.09
 - \$18,627.64
 - \$23,505.78
 - \$24,681.07
 - None of the above
32. Which of the following is true about an industry called a monopoly?
- Many close substitutes
 - Many different sellers
 - Price taker
 - Produces an undifferentiated product
 - None of the above
33. Uncertainty that has negative consequences such as prices falling before harvest, drought, or unfavorable export conditions is called what?
- Amortization
 - Depreciation
 - Market realities
 - Risk
 - None of the above
34. Mr. Brown has assets of \$1,000,000 and total liabilities of \$500,000. Half of his liabilities are classified as current liabilities. What is his debt to equity ratio? Equity is also referred to as net worth.
- 0.250
 - 0.500
 - 0.750
 - 1.000
 - None of the above
35. Mr. Black has assets of \$1,000,000, total liabilities of \$400,000, and current notes of \$50,000. What is his debt to asset ratio?
- 0.050
 - 0.375
 - 0.400
 - 0.525
 - None of the above

36. Which of the following should be listed on a balance sheet as a current liability?
- Breeding stock loans
 - Equipment loans
 - Notes payable
 - Real estate loans
 - None of the above
37. Mr. Blue is a corn and soybean farmer who is considering building hog barns. If he did this, he would feed the corn and soybeans to the hogs instead of selling the corn and soybeans. This is an example of:
- Diversification
 - Horizontal integration
 - Speculation
 - Vertical integration
 - None of the above
38. Which of the following is a basic principle of agricultural cooperatives:
- High return on equity capital
 - Membership includes retired farmers
 - Services provided at cost
 - Voting based on seniority
 - None of the above
39. Use of Section 179 deductions allowed by the Internal Revenue Service can be an important way to:
- Analyze net worth
 - Manage income tax liabilities
 - Plan an estate
 - Value property for eminent domain purposes
 - None of the above
40. Which of the following are essential elements of a contract?
- Competent parties
 - Legal or proper subject matter
 - Offer and acceptance
 - All of the above
 - None of the above
41. The purchase of private property by the government for public use is referred to as:
- Easement
 - Eminent domain
 - Escheat
 - Zoning
 - None of the above

42. Enterprise budgets different from farm records in that:
- Budgets are a history of what has happened, records are a projection of what will happen
 - Records are a history of what has happened, while budgets are a projection of what will happen
 - Records are not used for tax purposes, but budgets are
 - Records simple and easy to keep, while budgets are difficult and very time-consuming
 - None of the above
43. Ms. Champion has a grain bin and is deciding whether to store or sell this year's crop. The current price is greater than futures prices with little probability of changing. She should do which of the following?
- The grain bin is completely paid off, so storage is always the correct decision
 - Sell immediately
 - Store some of the crop and sell the rest
 - All of the above
 - None of the above
44. A balance sheet provides information on:
- Returns to farm operator's labor and management
 - Timing of cash payments
 - Timing of cash receipts
 - Value of items used in the farming operation
 - None of the above
45. A firm under pure competition experiences which of the following?
- Ability to set its own price
 - Buys all inputs from monopolies
 - Buys all inputs from monopsonies
 - Produces a differentiated product
 - None of the above
46. The children of Mr. Brown form a fruit and vegetable partnership. The three kids equally contribute land, equipment, and labor. Depreciation is charged at 15%. Assume that profits are split according to percentage contribution to the partnership, if there are profits to be shared. Last year, the kids realized an after-tax profit of \$60,000. What was the youngest child's share of the profits?
- \$9,000
 - \$16,833
 - \$20,000
 - \$30,000
 - None of the above

47. Farmers concerned about receiving a decreasing portion of the food dollar should do which of the following?
- File an antitrust lawsuit against food companies
 - Increase the value they add to their products
 - Lobby the government for additional food regulations
 - Lobby the government for support prices
 - None of the above
48. Corporations offer which of the following advantages over sole proprietorships?
- Continuous existence and direct control
 - Double taxation
 - Limited liability and continuous existence
 - Low startup costs and owner in direct control
 - None of the above
49. A decrease in intermediate or long term liabilities may be the result of:
- Increased land values
 - Increased net worth
 - Making a smaller than required payment on outstanding notes' principals
 - Making a larger than required payment on outstanding notes' principals
 - None of the above
50. Power of attorney and how to transfer an estate to future generations are included in which of the following?
- Deed
 - Mortgage
 - Promissory note
 - Will
 - None of the above

PART II

PROBLEM SOLVING MULTIPLE CHOICE

150 Points

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

A. BUDGET ANALYSIS (45 Points)

A farmer in Louisiana is currently planning his farming operation for the upcoming year. This farming operation includes 1,500 acres (900 acres of soybeans and 600 acres of sorghum). Please assist this farmer in making management decisions for the 2015 crop season. Use the attached soybeans and sorghum budgets (Tables 1 and 2, pages 22-23) to answer questions 51 – 65.

51. Total direct costs for the 600 acres of sorghum are:
 - a. \$168,864
 - b. \$178,656
 - c. \$185,844
 - d. \$197,046

52. Total direct costs for the 900 acres of soybeans are:
 - a. \$253,296
 - b. \$267,984
 - c. \$278,766
 - d. \$295,569

53. The total number of labor hours for sorghum production is:
 - a. 312.06
 - b. 337.02
 - c. 363.12
 - d. 388.08

54. The total number of labor hours for soybean production is:
 - a. 468.09
 - b. 505.53
 - c. 544.68
 - d. 582.12

55. What is the gross revenue from the sorghum crop?
 - a. \$30,156
 - b. \$216,000
 - c. \$324,000
 - d. \$364,500

56. What is the gross revenue from the soybean crop?
 - a. \$68,931
 - b. \$243,000
 - c. \$324,000
 - d. \$364,500

57. How much total revenue (gross income) is the farm expected to produce?
 - a. \$459,000
 - b. \$567,000
 - c. \$580,500
 - d. \$688,500

58. What is the total cost per bushel to produce soybeans?
 - a. \$6.25
 - b. \$6.62
 - c. \$6.88
 - d. \$7.30

59. What is the total cost per bushel to produce sorghum?
 - a. \$2.81
 - b. \$2.98
 - c. \$3.10
 - d. \$3.28

60. If the farmer is concerned about the yield he must receive to cover his total cost of production, what is the break-even yield for soybeans?
- a. 31.27 bu/ac
 - b. 33.08 bu/ac
 - c. 34.42 bu/ac
 - d. 36.49 bu/ac
61. If the farmer is concerned about the price he must receive to cover his total cost of production, what is the break-even price for sorghum?
- a. \$2.81/bu
 - b. \$2.98/bu
 - c. \$3.10/bu
 - d. \$3.28/bu
62. Assume that total direct costs for soybeans increase by 10%, what will be the total expected returns per acre if this happens?
- a. \$46.81
 - b. \$67.12
 - c. \$73.53
 - d. \$92.43
63. Assuming that total direct costs for soybeans increase by 10%, what will be new break-even yield for soybeans?
- a. 37.54 bu/ac
 - b. 39.80 bu/ac
 - c. 41.30 bu/ac
 - d. 43.78 bu/ac
64. Assume that total fixed costs for sorghum increase by 10%, what will be the total expected returns per acre if this happens?
- a. \$22.12
 - b. \$46.81
 - c. \$46.81
 - d. \$47.43
65. Assuming that total fixed costs for sorghum increase by 10%, what will be the new break-even price the farmer must receive?
- a. \$3.13
 - b. \$3.31
 - c. \$3.41
 - d. \$3.61

C. PRE-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.

Assume that Mr. Blue feels that hog prices will decline prior to marketing his hogs and is considering use of a hedge. Mr. Blue typically markets his hogs in October and experiences a basis of \$3.75/cwt below futures. On July 10th, he sells a lean hog contract (40,000 pounds) for \$74.75/cwt. Assume that on October 10th, Mr. Blue buys back the October futures contract for \$72.75/cwt.

73. What is the expected target price (expected selling price) when the hedge begins on July 10th?
- | | |
|----------------|----------------|
| a. \$69.00/cwt | c. \$76.50/cwt |
| b. \$71.00/cwt | d. \$78.50/cwt |
74. What is the cash price for the producer assuming the basis is as expected when the hogs are sold in October?
- | | |
|----------------|----------------|
| a. \$69.00/cwt | c. \$76.50/cwt |
| b. \$71.00/cwt | d. \$78.50/cwt |
75. What is the net position (profit/loss) of hedge per hundredweight (\$/cwt) in the futures market?
- | | |
|----------------|---------------|
| a. -\$1.75/cwt | c. \$3.75/cwt |
| b. \$2.00/cwt | d. \$5.75/cwt |
76. What is the combined (total) price per hundredweight that he will get in the cash and futures market?
- | | |
|----------------|----------------|
| a. \$69.00/cwt | c. \$76.50/cwt |
| b. \$71.00/cwt | d. \$78.50/cwt |

D. EQUIPMENT COST ANALYSIS (15 Points)

Assume that Mr. Copland must decide how to harvest his 450 acres of sorghum. He has identified three alternatives which include owning a combine, leasing a combine, or hiring someone to custom harvest his soybeans. He estimates that by owning a combine, his annual fixed costs would be \$7,500 and his annual variable (operating) costs would be \$5,500. Leasing the same machined would cost \$55/hour and would have a field capacity of 5.9 acres/hour. A neighboring farmer has mentioned he would be willing to custom cut Mr. Copland's sorghums for a total cost of \$12,500. Please assist Mr. Copland in this decision by answering the following questions.

77. What is the per acre variable cost of owning the combine?
a. \$9.32/acre c. \$16.67/acre
b. \$12.22/acre d. \$28.89/acre
78. What is the total per acre cost of owning the combine?
a. \$11.11/acre c. \$27.78/acre
b. \$12.22/acre d. \$28.89/acre
79. What is the per acre cost of leasing the combine?
a. \$9.32/acre c. \$16.67/acre
b. \$11.11/acre d. \$27.78/acre
80. What is the per acre cost of custom harvest?
a. \$11.11/acre c. \$27.78/acre
b. \$12.22/acre d. \$28.89/acre
81. Which alternative should Mr. Copland choose if all he is concerned about is cost per acre?
a. Buy/own the combine c. Lease combine
b. Custom harvest d. None of the above

E. FINANCIAL ANALYSIS (12 Points)

Using the information below, complete the following financial analysis for January 1, 2015:

<u>Assets</u>		<u>Liabilities</u>	
Checking and savings	\$17,800	Accounts payable	\$5,100
Accounts receivable	\$500	Land principal due 2015	\$22,000
Calves	\$18,600	Equipment loan principal due 2015	\$18,000
Market hogs	\$70,000	Home loan principal due 2015	\$6,000
Feed and hay	\$22,500	Accrued interest	\$28,450
Corn	\$22,000	Accrued taxes	\$13,250
Total Current Assets	_____	Total Current Liabilities	\$92,800
Land	\$850,000	Land loan balance	\$550,000
House	\$90,000	Equipment loan balance	\$90,000
Machinery/equipment	\$310,000	Home loan balance	\$52,800
Cows and Bulls	\$51,000		
Autos	\$47,000		
Sows and Boars	\$26,000		
Hog Buildings	\$74,000		
Total Non-Current Assets	\$1,448,000	Total Non-Current Liabilities	_____
Total Assets	\$1,599,400	Total Liabilities	\$785,600
Total Equity	_____		

82. What is the value of current assets?
 - a. \$92,800
 - b. \$151,400
 - c. \$692,800
 - d. \$813,800

83. What is the equity value as of January 1, 2015?
 - a. \$92,800
 - b. \$151,400
 - c. \$692,800
 - d. \$813,800

84. What is the debt to asset ratio?
 - a. 0.49
 - b. 0.51
 - c. 0.97
 - d. 1.63

85. What is the debt to equity ratio?
 - a. 0.49
 - b. 0.51
 - c. 0.97
 - d. 1.63

F. INCOME STATEMENT ANALYSIS (15 Points)

You have been asked to prepare the Addams Family's income statement for 2014. Assume that the following information has been provided to you:

Addams Family Nursery and Landscaping Company

Plant Sales	\$150,000	Office Supply Expenses	\$1,500
Income Tax Expense	\$30,000	Equipment Depreciation Expense	\$7,000
Cost of Goods Sold	\$120,000	Accessories Sales	\$45,000
Lawn Care Fee Income	\$10,000	Rent	\$7,000
Hourly Labor Expense	\$45,000	Insurance	\$5,000
Advertising Expense	\$2,500	Landscape Fee Income	\$25,000
Soil Sales	\$15,000	Fertilizer Sales	\$5,000

86. What is the total income for the revenue section of the income statement?
- a. \$130,000 c. \$215,000
b. \$185,000 d. \$250,000
87. What are the total operating (variable) expenses?
- a. \$30,000 c. \$54,000
b. \$49,000 d. \$68,000
88. What are the total fixed expenses?
- a. \$7,000 c. \$19,000
b. \$12,000 d. \$30,000
89. What is net income?
- a. \$25,000 c. \$62,000
b. \$32,000 d. \$130,000
90. What is the depreciation expense ratio (depreciation divided by gross revenue)?
- a. 0.03 c. 0.07
b. 0.05 d. 0.09

G. LOAN AMORTIZATION SCHEDULE (15 Points)

An agricultural producer purchases land that he is financing over twenty years, making an annual payment in November each year. The producer is able to secure an APR (annual percentage rate) of 5%. Complete the following loan amortization schedule by selecting the value that is missing from the table. Do not worry about calculating the schedule for years not shown as you are provided all the information you need to calculate the answers.

Year	Beginning Balance	Annual Payment	Interest Paid	Principal Repayment	Ending Balance
1	\$150,000.00	\$12,036.39	Question 91	\$4,536.39	\$145,463.61
...					
6	\$124,933.59	\$12,036.39	\$6,246.68	\$5,789.71	\$119,143.88
7	\$119,143.88	\$12,036.39	\$5,957.19	\$6,079.19	\$113,064.69
8	\$113,064.69	\$12,036.39	\$5,653.23	\$6,383.15	\$106,681.54
...					
10	\$99,979.23	\$12,036.39	\$4,998.96	\$7,037.43	\$92,941.80
11	\$92,941.80	\$12,036.39	Question 93	Question 94	\$85,552.50
12	\$85,552.50	\$12,036.39	\$4,277.63	\$7,758.76	\$77,793.74
...					
18	\$32,778.07	\$12,036.39	\$1,638.90	\$10,397.48	\$22,380.59
19	\$22,380.59	\$12,036.39	\$1,119.03	\$10,917.36	Question 95
20	Question 95	\$12,036.39	\$573.16	Question 95	\$0.00

91. What is the amount of interest paid in year 1?
 - a. \$3,054.65
 - b. \$4,647.09
 - c. \$5,334.08
 - d. \$7,500.00

92. In which year does the portion of the payment applied to the principal exceed the interest payment?
 - a. Year 1
 - b. Year 6
 - c. Year 7
 - d. Year 20

93. What is the amount of interest paid in year 11?
 - a. \$3,054.65
 - b. \$4,647.09
 - c. \$5,334.08
 - d. \$7,500.00

94. What is the amount of principal paid in year 11?
 - a. \$6,702.31
 - b. \$7,389.30
 - c. \$8,146.70
 - d. \$9,902.37

95. What is the principal balance at the end of year 19 (which is also the principal repayment in year 20)?
 - a. \$0.00
 - b. \$11,463.23
 - c. \$12,036.39
 - d. \$33,297.94

H. MARGINAL ANALYSIS (15 Points)

The following data relates to the use of bees to increase pollination in a peach orchard and therefore increase peach production. Address the following economic relationships assuming the cost of each beehive is \$35 and the price of a bushel of peaches is \$10. It is recommended you fill in all the blanks in the table before attempting to answer the questions.

Additional Beehive (input)	Bushels of Peaches (output)	Total variable cost	Total fixed cost	Total cost	Marginal cost	Total revenue	Marginal revenue
0	150	\$0	\$1,300	\$1,300	-----		-----
1	180					\$1,800	
2	189	\$70		\$1,370			
3	194						
4	188				-\$5.83		
5	170						

96. What is the marginal revenue when two (2) beehives are used?
- \$10.00
 - \$45.00
 - \$1,300.00
 - \$1,890.00
97. What is the marginal cost when going from one (1) to two (2) beehives are used?
- \$1.17
 - \$3.89
 - \$10.00
 - \$45.00
98. What is the total revenue when four (4) beehives are used?
- \$1,300
 - \$1,440
 - \$1,500
 - \$1,880
99. Marginal revenue when five (5) beehives are used is:
- \$10.00
 - \$45.00
 - \$50.00
 - \$1,700.00
100. What is the number of beehives that maximize profit?
- 2
 - 3
 - 4
 - 5

Table 1. Estimated costs per Acre
Soybeans, RR, 8-row equipment, stale seedbed, non-irrigated,
alluvial soils, Northeast Louisiana, 2015.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
INCOME					
Soybeans	bu	9.00	45.0000	405.00	_____

TOTAL INCOME				405.00	_____
DIRECT EXPENSES					
CUSTOM SPRAY					
App by Air (5 gal)	appl	6.00	3.0000	18.00	_____
App by Air (3 gal)	appl	4.75	3.0000	14.25	_____
HARVEST AIDS					
Gramoxone Inteon	oz	0.25	16.0000	4.00	_____
FERTILIZERS					
LA Phosphate	lb	0.61	50.0000	30.50	_____
LA Potash	lb	0.34	50.0000	17.00	_____
FUNGICIDES					
Quadris	oz	1.95	6.0000	11.70	_____
Stratego	pt	24.91	0.6250	15.57	_____
HERBICIDES					
Roundup WeatherMax	oz	0.27	66.0000	17.82	_____
2,4-D Amine 4	pt	1.85	1.0000	1.85	_____
Valor WP	oz	4.23	2.0000	8.46	_____
Dual II Magnum	pt	14.50	1.0000	14.50	_____
Flexstar HL	pt	4.50	1.0000	4.50	_____
INSECTICIDES					
Brigade EC	pt	4.68	0.7500	3.51	_____
Orthene 90S	lb	5.75	0.6000	3.45	_____
Intrepid 2F	oz	1.76	6.0000	10.56	_____
SEED/PLANTS					
Soybean Seed RR	lb	1.11	50.0000	55.50	_____
ADJUVANTS					
Surfactant	pt	3.60	1.0000	3.60	_____
CUSTOM FERT/LIME					
Lime (Spread)	ton	48.00	0.3300	15.84	_____
CUSTOM HARVEST/HAUL					
Haul Soybeans	bu	0.27	45.0000	12.15	_____
OPERATOR LABOR					
Harvesters	hour	12.55	0.0851	1.07	_____
LA Hired Labor					
Implements	hour	9.60	0.1345	1.29	_____
Tractors	hour	9.60	0.4272	4.11	_____
DIESEL FUEL					
Tractors	gal	2.74	4.0612	11.14	_____
Harvesters	gal	2.74	1.2047	3.30	_____
REPAIR & MAINTENANCE					
Implements	Acre	4.24	1.0000	4.24	_____
Tractors	Acre	2.23	1.0000	2.23	_____
Harvesters	Acre	2.58	1.0000	2.58	_____
INTEREST ON OP. CAP.	Acre	5.03	1.0000	5.03	_____
TOTAL DIRECT EXPENSES				297.76	_____
FIXED EXPENSES					
Implements	Acre	7.22	1.0000	7.22	_____
Tractors	Acre	13.55	1.0000	13.55	_____
Harvesters	Acre	9.88	1.0000	9.88	_____
TOTAL FIXED EXPENSES				30.65	_____
TOTAL SPECIFIED EXPENSES				328.41	_____

Table 2. Estimated costs per Acre
 Grain Sorghum, 8-row equipment, 38 inch rows, non-irrigated,
 Northeast Louisiana, 2015.

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
INCOME					
Grain Sorghum	bu	3.60	100.0000	360.00	_____

TOTAL INCOME				360.00	_____
DIRECT EXPENSES					
CUSTOM SPRAY					
App by Air (5 gal)	appl	6.00	1.5000	9.00	_____
App by Air (3 gal)	appl	4.75	2.0000	9.50	_____
FERTILIZERS					
LA Nitrogen	lb	0.50	110.0000	55.00	_____
LA Phosphate	lb	0.61	40.0000	24.40	_____
LA Potash	lb	0.34	40.0000	13.60	_____
HERBICIDES					
Roundup WeatherMax	oz	0.27	55.0000	14.85	_____
2,4-D Amine 4	pt	1.85	2.0000	3.70	_____
Atrazine 4L	pt	1.50	4.0000	6.00	_____
Dual II Magnum	pt	14.50	1.0000	14.50	_____
INSECTICIDES					
Karate Z	oz	3.40	2.0000	6.80	_____
Belt	oz	6.13	2.5000	15.33	_____
Transform	oz	7.42	1.5000	11.13	_____
SEED/PLANTS					
Sorghum Concept	lb	2.28	6.0000	13.68	_____
Cruiser 5FS Seed Tmt	oz	17.38	0.4560	7.93	_____
CUSTOM FERT/LIME					
Lime (Spread)	ton	48.00	0.3300	15.84	_____
CUSTOM HARVEST/HAUL					
Haul Sorghum	bu	0.25	100.0000	25.00	_____
OPERATOR LABOR					
Harvesters	hour	12.55	0.0851	1.07	_____
LA Hired Labor					
Implements	hour	9.60	0.1190	1.14	_____
Tractors	hour	9.60	0.4011	3.85	_____
DIESEL FUEL					
Tractors	gal	2.74	3.4993	9.60	_____
Harvesters	gal	2.74	1.2047	3.30	_____
REPAIR & MAINTENANCE					
Implements	Acre	5.20	1.0000	5.20	_____
Tractors	Acre	1.91	1.0000	1.91	_____
Harvesters	Acre	2.58	1.0000	2.58	_____
INTEREST ON OP. CAP.	Acre	6.53	1.0000	6.53	_____

TOTAL DIRECT EXPENSES				281.44	_____
RETURNS ABOVE DIRECT EXPENSES				78.56	_____
FIXED EXPENSES					
Implements	Acre	6.92	1.0000	6.92	_____
Tractors	Acre	11.50	1.0000	11.50	_____
Harvesters	Acre	9.88	1.0000	9.88	_____

TOTAL FIXED EXPENSES				28.30	_____

TOTAL SPECIFIED EXPENSES				309.74	_____
RETURNS ABOVE TOTAL SPECIFIED EXPENSES				50.26	_____
RESIDUAL ITEMS					
Overhead (Owner)	acre	30.00	1.0000	30.00	_____
RESIDUAL RETURNS				20.26	_____

**2015 Louisiana State FFA Farm Business Management
Career Development Event**

KEY

Multiple Choice

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

Problems

51. A	52. B	53. C	54. D	55. B
56. D	57. C	58. D	59. C	60. D
61. C	62. A	63. B	64. D	65. A
66. C	67. B	68. C	69. C	70. B
71. A	72. B	73. B	74. A	75. B
76. B	77. B	78. D	79. A	80. C
81. C	82. B	83. D	84. A	85. C
86. A	87. B	88. C	89. B	90. B
91. D	92. C	93. B	94. B	95. B
96. A	97. B	98. D	99. A	100. B