

Participant Name (please print) \_\_\_\_\_**KEY**\_\_\_\_\_

## 2010 NATIONAL FFA FARM BUSINESS MANAGEMENT CAREER DEVELOPMENT EVENT

2010 National FFA Farm Business Management CDE

Participant Number \_\_**KEY**\_\_\_\_

State Abbreviation \_\_\_\_\_

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## **PART I – FINANCIAL STATEMENTS**

Review the Balance Sheets, Income Statements, Statement of Cash Flows, and the Financial Analysis (**pages R4 through R6 in the resource information**) prior to answering the following questions

- A. The Boones want to review their basic understanding of financial management tools and practices by answering the following questions and statements. Circle the correct response. (1 point each)
1. Which financial statement lists the cash and non-cash receipts and expenses of a farm during a specified period of time?
    - a. Balance sheet
    - b. Income statement**
    - c. Statement of owner equity
    - d. Statement of cash flow
  2. Which financial statement explains cash balance changes between the beginning and ending balance sheet?
    - a. Balance sheet
    - b. Income statement
    - c. Statement of owner equity
    - d. Statement of cash flow**
  3. Which financial statement explains owner equity changes between the beginning and ending balance sheet?
    - a. Balance sheet
    - b. Income statement
    - c. Statement of owner equity**
    - d. Statement of cash flow
  4. Which financial statement lists assets, liabilities, and owner equity at a particular time?
    - a. Balance sheet**
    - b. Income statement
    - c. Statement of owner equity
    - d. Statement of cash flow
  5. An accounting period for the farm business that covers the time period of a July 1 to June 30 of each year would be an example of what type of accounting period?
    - a. Calendar year accounting period
    - b. Fiscal year accounting period**

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6. Which type of accounting will provide the most accurate income statement for the farm business?
    - a. Cash accounting
    - b. Accrual accounting**
  7. Which of the following items would not be a farm operating expense for the accounting period?
    - a. Purchase of livestock feed
    - b. Purchase of fertilizer
    - c. Purchase of a new combine**
  8. The noncurrent assets on the Boone Farm's modified cost balance sheet will be valued at:
    - a. Market value
    - b. Cost less depreciation or book value**
  9. What type of income statement for Boone Farm is contained in the resource information on page R5?
    - a. Cash income statements
    - b. Accrual adjusted income statements**
  10. In the Statement of Cash Flows (on page R6 of the resource information) Net Cash Provided by Financing Activities is a positive \$741,189 for 2009. This indicates:
    - a. Principal payments exceeded the amount of new borrowing for the year.
    - b. Principal payments were less than the amount of new borrowing for the year.**
  11. In the Fair Market Value Balance Sheet (on page R4 of the resource Information) 2009 assets have been valued at:
    - a. Fair market value less depreciation on December 31, 2009
    - b. Cost of assets less accumulated depreciation on December 31, 2009.
    - c. Fair market value on December 31, 2009**
- B. Using the Balance Sheets, Income Statements, Statement of Cash Flows, and the Financial Analysis (**pages R4 through R6 in the resource information**) answer the following questions. Note: Round all calculations to two decimal places.
1. As of 12/31/2009 was the Boone Farm business liquid? Circle the correct response. (2 points)

**Yes**    No
  2. As of 12/31/2009 was the Boone Farm business solvent? Circle the correct response. (2 points)

**Yes**    No

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3. What percent of the Boone Farm business's total debt (liabilities) are due in 2009? (2 points)

  75.07   %

$$\$676,249/\$900,817 = X * 100 =$$

4. In 2009, what is the Boone Farm's operating profit margin? Note: OPM is expressed as a percentage. (2 points)

  16.49   %

$$(\$883,860 + \$62,403 + (\$525) - \$194,182)/ \$4,557,776 = X * 100 =$$

5. Using the modified cost basis balance sheet, compute the percent of the 12/31/2009 total assets that are classified as current. (2 points)

  50.97   %

$$\$2,652,312/ \$5,203,986 = X * 100 =$$

6. What is the amount of valuation equity contained in the Boone Farm fair market value balance sheet for December 31, 2009? (2 points)

Valuation equity on 12/31/2009 FMV balance sheet   \$1,433,137.00  

$$\$4,877,776 - \$3,444,639 =$$

7. Using the modified cost basis balance sheet, what is the value of retained earnings and contributed capital for the Boone Farm on December 31, 2009? (2 points)

Retained earnings and contributed capital on December 31, 2009 balance sheet   \$3,444,639.00  

8. What is the magnitude or the amount of liquidity on 12/31/2009? (2 points)

  \$1,738,489.00  

**Working Capital**

9. As of December 31, 2009, depreciation was what percent of gross revenue? (2 points)

  4.44   %

$$\$202,308/ \$4,557,776 = X * 100 =$$

End of Part I – FINANCIAL STATEMENTS

Total Possible Points = 29

POINTS EARNED PART I =

**PART II – BUDGETING**

- A. The Boone Farm has typically sold their yearling steers out of the feedlot locally when they weigh about 900 lbs. The current local market price is \$95.00 per cwt. for 900 lb. steers (\$855.00/head). Tinker is considering retaining ownership and have the steers custom fed to 1,300 lbs. (slaughter weight). There are no feedlots in the area, so the Boones will have to ship the steers 600 miles to a finishing lot. Since 50,000 lbs. is the maximum weight limit on the trucks, the Boones could ship 55 head of 900 lb. steers on a truck. The cost of shipping will be \$3.00 per loaded mile or \$1,800.00 per load (\$32.75 per steer). The finishing lot currently has an average cost of gain of \$0.72 per lb. or \$288.00 per steer (400 lbs. x \$0.72). There will be an extra \$10.00 fee to deliver the steers to the packing plant. The Boones also need to figure a 2% death loss (\$24.96 per steer). Even though the Boones would be paid on carcass quality, they figure they should average \$0.96 per lb. live weight on the 1,300 lb. slaughter steers (\$1,248.00).
1. Complete a partial budget form to determine a recommendation for the Boone Farm. Calculate on a per head basis. Round answers to two decimal places. Write "none" or "zero" in any category with no entry. (1 point each)

Situation: Ship at 900 lbs. and retain ownership of the steers through slaughter	
<b>Additional Costs:</b> <b>Shipping (to finishing lot) = \$ 32.75</b> <b>Feedlot Expense = \$ 288.00</b> <b>Shipping (to packing plant) = \$ 10.00</b> <b>Death Loss = \$ 24.96</b>	<b>Additional Returns:</b> <b>Slaughter Steers = \$1,248.00</b>
<b>Subtotal = \$ 355.71</b>	<b>Subtotal = \$1,248.00</b>
<b>Reduced Returns:</b> <b>Yearling Steers = \$ 855.00</b>	<b>Reduced Costs:</b> <b>None or Zero</b>
<b>Subtotal = \$ 855.00</b>	<b>Subtotal = \$ 0.00</b>
<b>Total (AC +RR) = \$ 1,210.71</b>	<b>Total (AR + RC) = \$ 1,248.00</b>
<b>Net Change in Income = \$ 37.29</b>	

- a. Should the Boone Farm retain ownership of the steers through slaughter? Circle the correct response. (1 point)

**Yes**      **No**

- b. Fuel costs have been rising. How much would the shipping cost have to increase to make this a breakeven proposition? (1 point)

\$   37.29   / steer

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- c. Since all the cattle in the area are shipped to distant finishing lots, what would the increase in fuel costs do to the local cattle market? Circle the correct response. (1 point)

**Depress the cattle market**      Expand the cattle market      Do nothing

2. If the Boone Farm is going to retain ownership of the steers through slaughter, would the Boones be better off to ship the cattle as 800 lb. yearling steers rather than 900 lbs.? At 800 lbs. the Boones can get 62 head on a truck (\$1,800 divided by 62 head = \$29.00 per head shipping). The current local market price is \$98.00 per cwt. for 800 lb. steer calves (\$784.00/head). Other costs (per steer) to consider include: feedlot expense = \$360.00 (500 @ \$0.72), shipping to packing plant = \$10.00, and death loss = \$24.96
- a. Complete a partial budget form to determine a recommendation for the Boone Farm. Calculate on a per head basis. Round answers to two decimal places. Write "none" or "zero" in any category with no entry. (1 point each)

Situation: Ship at 800 lbs. and retain ownership of the steers through slaughter	
<b>Additional Costs:</b> <b>Shipping (to finishing lot) = \$ 29.00</b> <b>Feedlot Expense = \$ 360.00</b> <b>Shipping (to packing plant) = \$ 10.00</b> <b>Death Loss = \$ 24.96</b>	<b>Additional Returns:</b> <b>Slaughter Steers = \$1,248.00</b>
Subtotal = <b>\$ 423.96</b>	Subtotal = <b>\$ 1,248.00</b>
<b>Reduced Returns:</b> <b>Yearling Steers = \$ 784.00</b>	<b>Reduced Costs:</b> <b>None or Zero</b>
Subtotal = <b>\$ 855.00</b>	Subtotal = <b>\$ 0.00</b>
<b>Total (AC +RR) = \$1,207.96</b>	<b>Total (AR + RC) = \$ 1,248.00</b>
<b>Net Change in Income = \$ 40.04</b>	

- b. Would the Boones be better off to ship the yearling steers at 800 lbs.? Circle the correct response. (1 point)

**Yes**      No

- c. How much would the Boones gain or lose by shipping at 800 lbs. rather than 900 lbs? (1 point)

\$   2.75   /head      \$40.04 - \$37.29 =

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- B. Review the information in the Tobacco (owned land) Enterprise Budget (**page 17 of the resource information**). Answer the following questions related to projections for the enterprise budget. (1 point each)

1. What is projected tobacco yield per acre?   2,125   lbs.
2. What are the projected hours of hired labor per acre?   160   hours
3. What are the projected returns above total variable costs? \$  823.64  /acre
4. What is the projected price for tobacco transplants? \$  42.00  /1,000
5. What is the projected total interest on operating capital? \$  157.86  /acre

- C. Review the information in the Soybean - Full Season (owned land) Enterprise Budget (**page R12 of the resource information**). Answer the following questions. (Note: Round answers to two decimal places) (1 point each)

1. What is the break-even price per bushel to cover total variable costs?  
(Note: Assume all inputs and outputs will not change.)  
 $40 * P - \$ 203.11 = 0$   
  5.08   / bu.
2. What is the break-even yield per acre to cover total variable costs?  
(Note: Assume all inputs and outputs will not change.)  
 $\$8.25 * Y - \$203.11 = 0$   
 24.62  bu. /acre



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- D. Review the Corn (cash rent) Enterprise Budget (**page R10 of the resource information**). The Boones developed this enterprise budget at the beginning of the year to be used with the projected cash flow for Boone Farm. As production time approaches, Tinker wants to make the following changes in the enterprise budget to better reflect current conditions. Using the changes Tinker provided, make the changes on the enterprise budget and answer the following questions. (Note: Round all answers to two decimal places. Assume all other inputs and outputs will not change.) (1 point each)

Changes for the corn (cash rent) enterprise budget (on a per acre basis):

Nitrogen, Anhydrous	@ \$ 0.40 /lbs.
Fuel and Oil	\$ 25.00 /acre
Land Rent	\$ 115.00 /acre
Depreciation	\$ 25.00 /acre
Price for Corn	@ \$ 4.25 /bushel

1. What are the total variable costs per acre? \$   449.91   /acre
2. What are the total fixed costs per acre? \$   54.11   /acre
3. What are the total receipts per acre? \$   510.00   /acre
4. What are the returns above total variable costs? \$   60.09   /acre
5. What are the returns above all specified costs? \$   5.98   /acre
6. What is the break-even price per bushel to cover all specified costs? \$   4.20   /bu.  
 $120 * P - \$449.91 - \$54.11 = 0$

End of Part II – BUDGETING

Total Possible Points = 32

POINTS EARNED PART II =

### PART III – CASH FLOW PLANNING

- A. A cash flow indicates the ability of a business to generate cash inflows and outflows. A cash flow projection enables the Boones to compare projected dollar flows to those that actually happened the previous year. Distinguish between the advantages and disadvantages of a cash flow projection. Write an "A" on the blank provided for each advantage and a "D" for each disadvantage. (1 point each)

  A   It shows the Boones when excess cash will be available, and when cash deficits will occur

  D   It requires the Boones to devote considerable time to the collecting and projecting of data

  A   It helps the Boones evaluate the relationship of their short-term debt to their repayment capacity

  A   It provides for budgeted loans that are borrowed only for the periods through which they are required

  A   It provides a technique for combining personal and farm cash needs

  D   It needs constant review and revision of the entire plan

- B. Following is a list of items related to the Boone Farm operation. Tinker and Mary are not sure if they should be included in the 2010 projected cash flow. Indicate with a (+) for those items that should be included and a (O) for those items that should not be included in a projected cash flow. Write your answers on the blanks provided. (1 point each)

1. Value of Depreciation   O  

2. Non Farm Business Expense   +  

3. Livestock purchased   +  

4. Wagon traded for corn seed   O  

5. Custom Work   +  

6. Value of Operator Labor and Management   O  

7. Fertilizer purchased in 2009, but paid for in 2010   +  

8. Feed in inventory   O  

9. Ending cash balance   +

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C. Answer the following questions regarding the Boone Farm's 2010 Projected Cash Flow (**pages R20 and R21 of the resource information**). Write your answers on the blanks provided. (1 point each)

1. What is the smallest amount (greater than zero) the Boone Farm will have to borrow in any one month during 2009? \$   2,118
2. What is the projected Operating Sales Total? \$  2,792,985
3. What is the projected Operating Expenses Total? \$  1,983,540
4. What is the projected ending operating loan balance on December 31, 2010? \$       0
5. In what month does the Boone Farm project the largest cash outflow?   June    
\$  427,051
6. How much principal was paid by June 30, 2010? \$  711,645
7. How much does Boone Farm plan to spend on fertilizer in 2010? \$  366,360
8. What is the largest projected operating expense item?  Labor Hired
9. What is ending cash balance on June 30, 2010? \$   1,500
10. What was the cash difference for the Month of January? \$  222,892

D. One of Tinker and Mary's lenders explains that it is necessary to look at cash flow sensitivity percentages. Some lenders look at three primary factors. This lender, however, only wants to look at the adjustments listed below (**pages R20 and R21 of the resource information**): (Note: Round your answers to nearest two decimal places.) Write your answers on the blanks provided. (1 point each)

1. What will the Ending Cash Balance be if there is a 5% reduction in Crop Sales?  
New ending cash balance \$  94,293.50   
 $\$198,181 - (\$2,077,750 * .05) =$
2. What will the Ending Cash Balance be if there is a 5% increase in the cost of Gas, Fuel, and Oil?  
New ending cash balance \$  190,163.80   
 $\$198,181 - (\$ 160,344 * .05) =$

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- E. Using the cash flow projection for the Boone Farm (**pages R20 and R21 of the resource information**), calculate the three cash flow sensitivity percentages. (NOTE: Round answers to two decimal places.) Write your answers on the blanks provided. (1 point each)

1. Operating Sales Total as a percentage of total cash inflows: 62.94 %  
 $\$ 2,792,985 / \$ 4,437,591 = X * 100 =$
2. Operating Expense Total as a percentage of total cash outflows: 57.30 %  
 $\$ 1,983,540 / \$ 3,461,601 = X * 100 =$
3. Interest paid as a percentage of cash Operating Sales Total: 2.64 %  
 $(\$ 59,637 + \$ 14,158) / \$ 2,792,985 = X * 100 =$

- G. Using the statement of cash flows for the Boone Farm (**page R6 of the resource information**), answer the following questions. Write your answers on the lines provided. (1 point each)

1. What line items increased every year between 2005 and 2009?
  - a. Farm Operating Receipts
  - b. Interest Paid
  - c. Family Withdrawals
  - d. Principal Payments - Op. Loans
2. During what two years was the Net Cash provided by Operating Activities greater than the Net Cash provided Financing Activities?
  - a. 2006
  - b. 2007
3. What was the largest line item in 2009? Farm Operating Receipts
4. During what year was the lowest Beginning of year Cash Balance? 2006
5. During what year was the highest Ending of year Cash Balance? 2007
6. In what year was the Net Change In Cash the best? 2006

End of Part III – CASH FLOW PLANNING

Total Possible Points = 40

POINTS EARNED PART III = \_\_\_\_\_

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#### PART IV – MARKETING

A. Match the terms on the right with correct definitions. Write the correct numbers on the blanks provided. Note: Each term may be used only once. (1 point each)

- |   |                  |
|---|------------------|
| ___9___ The right to sell underlying futures at a specific price                                    | 1. Basis         |
| ___12___ The relationship between quantity supplied and price                                       | 2. Bear          |
| ___7___ The action of taking a position in which one has bought futures contracts                   | 3. Bull          |
| ___3___ One who believes prices are too low and will advance  | 4. Call Option   |
| ___11___ One who attempts to anticipate price changes and through market activities to make profits | 5. Demand        |
| ___1___ Difference in future's price and local price  | 6. Hedger        |
| ___4___ The right to buy underlying futures at a specific price                                     | 7. Long          |
| ___8___ Funds deposited with a broker to trade futures contracts                                    | 8. Margin        |
| ___10___ The action of taking a position in which one has sold futures contracts                    | 9. Put Option    |
| ___5___ Shows the relationship between quantity purchased and price                                 | 10. Short        |
| ___2___ One who believes prices are too high and will decline                                       | 11. Speculator   |
| ___6___ One who sells futures contracts to protect a producer from price fluctuations               | 12. Supply Curve |

B. The soybeans raised by Boone Farm are an important cash crop. With this in mind, Tinker may want to consider ways to improve his net sales price.

1. The price for new crop soybeans at planting is just over Tinkers break-even price, to set a floor price and leave the opportunity open for higher fall price he should: (Note: circle all appropriate alternatives) (1 point each)
  - a. purchase a call option
  - b. forward contract and purchase a call option**
  - c. purchase a put option**
  - d. forward contract and purchase a put option

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2. The number of acres of soybeans to be grown this year is projected to be down and some think we could run out of soybeans before the next crop. Tinker has already forward contracted his beans for this year, how could he possibly take advantage of possible shortage? (Note: circle the correct response) (1 point)
- a. sell a call option
  - b. purchase a call option**
  - c. sell a put option
  - d. purchase a put option
3. When Tinker uses the futures and options for marketing his soybeans, each contract covers: (Note: circle the correct response) (1 point)
- a. 3,000 bu.
  - b. 5,000 bu.**
  - c. 10,000 bu.
  - d. 12,000 bu.
4. The steers that Tinker plans to feed out this year look to make record profits. To take advantage of this he should at this time: (Note: circle the correct response) (1 point)
- a. sell Put Options
  - b. buy Futures Contracts
  - c. forward contract**
  - d. sell Call Options
5. If the futures price for steers is \$95.00 and Tinker's records show that the basis varies from minus \$5 to minus \$15. What is highest and lowest price that Tinker would expect to get if he sold futures today? (Note: round answer to two decimal places) (1 point each)
- Highest Price \$   90.00
- Lowest Price \$   80.00
6. An increase in the value of the dollar relative to the currency of other countries should: (Note: circle all appropriate responses) (1 point each)
- a. Increase exports to other countries
  - b. Decrease exports to other countries**
  - c. Have no effect on imports or exports
  - d. Increase imports to the U.S.**

Participant Number   KEY   State Abbreviation       

7. When there is a large supply relative to demand in the corn market this is an indication that Tinker should: (Note: circle all appropriate responses) (1 point each)
- a. sell at harvest
  - b. store and sell later**
  - c. forward contract for sales in future**
  - d. sell now and purchase calls**
8. Under the current farm bill producers are now able to: (Note: circle the correct response) (1 point)
- a. plant only the base acreage they have
  - b. plant whatever non-vegetable crop they want**
  - c. plant only corn, soybeans, and wheat
  - d. plant whatever crops they want

End of Part IV – MARKETING

Total Possible Points = 25

POINTS EARNED PART IV =

## PART V – INCOME TAX MANAGEMENT

**A copy of the 2009 IRS Publication 225 – Farmer's Tax Guide will be provided to each participant to use in answering questions in this section.**

- A. Evaluate each of the following statements as it relates to income tax management. Write a (+) on the blank provided before each true statement. Write an (0) on the blank provided before each false statement. (1 point each)

  +   1. Like production cost, good management can reduce income taxes due

  +   2. Depreciation is the annual deduction taken on capital assets

  0   3. Money borrowed must be reported as taxable income **page 26**

  +   4. Age has nothing to do with income tax filing requirements

  +   5. Generally, you will have a capital gain or loss if you sell or exchange a capital asset **page 51**

- B. Complete the following statements concerning income tax management. Write your answers in the blanks provided. (1 point each)

1. When an IRS agent reviews tax and farm records this is known as a(n)

  audit  .

2. Cars and pickups may deduct actual expenses and depreciation or use

  mileage   deduction.

**page 23**

3. In 2009, the Section 179 deduction limit was \$   250,000  .

**page 36**

4. When is the purchase cost of feeder livestock deductible?

  At the time of their sale  

**page 8**

- C. Answer the following questions by circling the correct response. (1 point each)

1. After-tax income will be the greatest if year to year:

- a. **hold income steady from year to year.**
- b. have huge variations from year to year
- c. have no personal exemptions year to year
- d. hold off on larger capital purchases



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2. The Medicare portion of self-employment tax is imposed on in 2009 is:
- a. \$50,800 of earned income
  - b. \$76,800 of earned income
  - c. \$106,800 of earned income
  - d. on every dollar of earned income**
- page 72
3. The maximum earned income that FICA, social security tax, is imposed on in 2009 is:
- a. \$50,800
  - b. \$76,800
  - c. \$106,800**
  - d. on every dollar of earned income
- page 72
4. Commodity credit (CCC) grain transactions can be considered:
- a. loan income
  - b. grain sales
  - c. crop expenses
  - d. loan or sales income**
- page 10
5. The IRS requires farmers to use an accrual accounting system because it provides a more accurate estimate of net farm income.
- a. True
  - b. False**
- page 5
6. Prepaid expenses cannot exceed \_\_\_\_\_ % of the non-prepaid expenses consumed in a given year.
- a. 25
  - b. 50**
  - c. 75
  - d. 100
- page 19
7. The report given to each employee and the IRS on wages paid is \_\_\_\_\_.
- a. I-9
  - b. F-2
  - c. W-2**
  - d. W-4
- page 76
8. Farm income and expenses are reported to the IRS on:
- a. Schedule C
  - b. Schedule D
  - c. Schedule E
  - d. Schedule F**
- page 8

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9. Profits from hedges are treated as income:  
(Note: Assume cash method of accounting)

- a. they are not taxable
- b. the year received**
- c. the year product is sold
- d. the year product was raised

**page 52**

10. Good income tax management should:

- a. Get the final line on the tax form to zero
- b. Maximize after-tax income**
- c. Minimize the tax obligation
- d. Maximize the tax obligation

11. Section 179 deduction can be taken on all but one of the following:

- a. Crop machinery
- b. Single purpose agricultural structure
- c. Farm house**
- d. Breeding livestock

**pages 38 & 39**

12. The sale of the cull cows will be reported on what tax form?

- a. Schedule F
- b. Form 4797**
- c. Schedule C
- d. Form 4562

**pages 51 & 52**

- D. Assume a piece of old tillage equipment (with zero tax basis) was traded in for a new piece of tillage equipment. The new piece of tillage equipment cost was \$22,500 plus the trade-in. Answer the following questions. Note: Round answers to nearest dollar. (1 point each)

1. With the current prices and the market outlook the operation's capital purchases would best be depreciated as slowly as possible. What would the lowest amount of depreciation that could be taken in years one and two?

\$ 1,607 Year 1

$\$22,500 / 7 \text{ years} = \$3,214 / 2 \text{ (half year convention)} =$

\$ 3,214 Year 2

$\$22,500 / 7 \text{ years} =$

**page 45**

2. If it were needed in a high income year, what would the maximum depreciation available in year one?

\$ 22,500 Year 1

**Section 179 expensing**

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- E. Evaluate each of the following strategies as it relates to maximizing after-tax income. Write an (L) on the blank provided if the strategy would be used in a low income year. Write an (H) on the blank provided if the strategy would be used in a high income year.

- L**   Collect money due from custom work done
- H**   Borrow money at bank to pay outstanding accounts
- L**   Use straight line depreciation
- L**   Delay all possible expenditures
- H**   Delay livestock or crop sales
- H**   Buy feed and other supplies for future use
- L**   Take option of reporting sealed grain as income
- H**   Pay wages to family members
- H**   Buy needed equipment for increased depreciation
- H**   Use 179 expensing rule

- F. Write a (+) on the blank provided before each item which may be deductible on the Schedule F form. Write a (O) on the blank provided for each item which may not be deductible. (1 point each)

- +**   Operating loan interest
- +**   Repairs made on corn planter
- O**   Interest paid on home loan
- +**   Chemicals sprayed on corn
- +**   Seed

End of Part V – INCOME TAX MANAGEMENT
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Total Possible Points = 39
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POINTS EARNED PART V = <u>          </u>
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## PART VI – INVESTMENT ANALYSIS

- A. Tinker and Mary would like to retire when they reach their early 60's. They are not sure any of their children will take over the farming operation. As a result they are making plans as though the children may not be involved in the farm business. They plan to be debt free in 20 years. Using the financial coefficients for the time value of money (**pages R 23 and R 24 in the resource** information) answer the following questions. Note: Round all answers to the nearest dollar. (1 point each)

1. Assume the Boones are going to purchase land for one million dollars (\$1,000,000). Calculate the annual payment on a one million dollar loan with 6% interest amortized for 20 years.

Annual payments for 20 years = \$ 87,200

$$\text{\$ } 1,000,000 * 0.0872 =$$

2. Tinker and Mary are uncertain as to what may happen to land values over the next 25 years. They decide to put \$100,000 in an investment where they expect to earn 6% interest per year as a supplement to their investment in land. What would be the value of \$100,000 at the end of 25 years?

Value at end of 25 years = \$ 429,190

$$\text{\$ } 100,000 * 4.2919 =$$

3. Assume Tinker, age 62, and Mary, age 60, decide to retire. They plan to withdraw income from a \$700,000 investment (assume no tax consequences). Assuming they will receive 3% interest and plan to withdraw the money in equal payments over the next 25 years, answer the following questions.

- a. What would be their yearly retirement income? \$ 40,180

$$\text{\$ } 700,000 * 0.0574 =$$

- b. What would be their monthly retirement income? \$ 3,348

$$\text{\$ } 40,180 / 12 =$$

- B. Tinker has been dealing with a local dealer to upgrade his 1992 John Deere 7800 tractor to something a little larger and more powerful. New equipment is certainly attractive, but the local dealer has a nice 2006 John Deere 8230 4WD with a reasonable number of hours for a list price of \$144,900. The sales manager has offered Tinker \$49,000 in trade for his tractor. Assume that Tinker can finance the tractor at 6% for seven years. Note: Round all answers to two decimal places. (1 point each)

1. What is the amount to be financed? \$ 95,900.00  
 $\text{\$ } 144,900 - \text{\$ } 49,000 =$

2. Assume that Tinker amortizes the loan for seven years, what is the annual payment?

Annual payment for seven years = \$ 17,175.69

$$\text{\$ } 95,900 * 0.1791 =$$

Participant Number   KEY   State Abbreviation       

3. Complete the following chart for the first two years.

Payment Number	Payment Amount	Interest Paid On Loan	Principal Paid On Loan	Outstanding Balance
0				\$ 95,900.00
1	\$ 17,175.69	\$ 5754.00	\$ 11,421.69	\$ 84,478.31
2	\$ 17,175.69	\$ 5068.70	\$ 12,106.99	\$ 72,371.32

4. Assume that Tinker decides to amortize the loan for five years, what is the annual payment ?  
Annual payment for five years = \$ 22,776.66  
 $\$ 95,900 \times 0.2374 =$
5. Assume that Tinker thinks that extending the loan for ten years makes better sense. What is the annual payment?  
Annual payment for ten years = \$ 13,032.81  
 $\$ 95,900 \times 0.1359 =$
6. Answer the following questions by circling the correct response.
- a. The amount of principal paid each year on this note will remain the same.  
  
True                      **False**
- b. It is generally recommended that the term of a loan be less than or equal to the useful life of the asset.  
  
**True**                      False
- c. Principal is:  
  
(1) also known as the present value of a uniform series  
**(2) the amount of money actually borrowed from a lender**  
(3) the amount of money you actually repay at the end of a loan transaction
- d. Return on investment:  
  
**(1) is the net profit or net loss realized from an investment**  
(2) is always going to be a positive number  
(3) is a number that represents your ability to meet all debt  
(4) is something that farmers never figure because it's always too low

Participant Number   KEY   State Abbreviation       

C. Match the terms on the right with the correct definitions. Write the correct number in the blanks provided. Each term will be used only once. (1 point each)

- |              |  |                     |
|--------------|--|---------------------|
| <u>  9  </u> | Product of the principal, the time in years, and the annual rate of interest   | 1. Accrued interest |
| <u>  6  </u> | A calculation used to determine the current or present value of a cost or receipt expected in the future. Adjusts for time value of money.   | 2. Amortization     |
| <u>  4  </u> | An addition to revenue, net worth or any other account.  | 3. Compounding      |
| <u>  8  </u> | Percent charged on principal for the use of money. Always expressed as an annual rate. Also called Annual Percentage Rate (APR).   | 4. Credit           |
| <u>  3  </u> | Interest received from an investment is added to the principal and interest is paid again on the total sum. It can be used to determine the future value of the amount of money that you now have. | 5. Debt             |
| <u>  7  </u> | The rental charge for the use of principal. The expense incurred for borrowing money or the revenue generated from lending money.  | 6. Discounting      |
| <u>  5  </u> | An addition to an expense or asset account, or a deduction from a revenue, net worth, or liability account.  | 7. Interest         |
| <u>  2  </u> | The repayment of a loan and the interest due with a series of equal payments over a specified period of time.  | 8. Interest rate    |
| <u>  1  </u> | Interest owed but not yet paid   | 9. Simple interest  |

End of Part VI – INVESTMENT ANALYSIS

Total Possible Points = 30

POINTS EARNED PART VI =

Participant Number KEY State Abbreviation \_\_\_\_\_

## PART VII – RISK MANAGEMENT

- A. Match the terms on the right with the correct description. Write the correct number in the blanks provided. (1 Point each)

<u>Description</u>	<u>Term</u>
<u>2</u> Unexpected circumstances where the probability of an event occurring can be empirically determined.	1. Insurance
<u>5</u> The act of managing or controlling exposures to risk in order to meet preset objectives or risk exposure guidelines.	2. Risk
<u>4</u> Where the probability of an event occurring cannot be empirically determined.	3. Insurance Premiums
<u>1</u> Economic device whereby an individual or firm substitutes a certain cost for an uncertain financial loss.	4. Uncertainty
<u>3</u> The payment to an insurance company by a policyholder to purchase and maintain an insurance policy	5. Risk Management

- B. The Boones have made a significant investment to expand the capacity for backgrounding steer calves. While they expect this expansion to contribute to profits, there continues to be uncertainty about feed costs, the price of steer calves, and the price of yearling steers. Use the feeder steer backgrounding enterprise budget (**page R 19 of the resource information**) to answer the following questions. Note: Round answers to two decimal places.

1. Using the corn and corn silage ration to background the steer calves, answer the following questions. (2 points each)

- a. What is the breakeven price for yearling steers to cover total variable costs?

Breakeven price to cover total variable costs = \$ 83.26 /cwt.  
 $950 * P - \$ 790.97 = X * 100 =$

- b. What is the breakeven price for yearling steers to cover all specified costs?

Breakeven price to cover all specified costs = \$ 85.15 /cwt.  
 $950 * P - \$ 790.97 - \$ 17.98 = X * 100 =$

2. What are the total feed costs for the two alternative rations? (2 points each)

Corn and Hay Ration Feed Costs \$ 268.60 /head  
 $\$176.00 + \$21.00 + \$54.00 + \$17.60 =$

Corn and Silage Ration Feed Costs \$ 233.20 /head  
 $\$120.00 + \$54.00 + \$17.60 + \$41.60 =$

Participant Number   KEY   State Abbreviation       

3. Assume that the price of corn silage per ton is always eight times the price of a bushel of corn. Using the corn and silage ration to background feeder steers, calculate the break-even prices for corn and corn silage. Assume that all other costs and returns remain the same. (Note: Use the return to corn and corn silage of \$207.65 in your breakeven calculations.) (2 points each)

a. Breakeven price of corn \$   5.14   / bu.

P = price for corn; 8P = price for corn silage

$$30 * P + (1.3 * 8P) - \$207.65 = 0; 30P + 10.4P = \$207.65$$

b. Breakeven price of corn silage \$   41.12   /ton

$$P = \$5.14 * 8$$

4. The Boones can use the futures market to hedge the price of yearling steers. At the current time, they are reasonably certain that they can hedge the 950 lb. yearling steers and receive \$95.00 per cwt for their steers. At \$95.00 per cwt. for yearling steers and using the corn and corn silage ration, what is the breakeven price for purchased steer calves? Note: Round answers to two decimal places. Tip: In calculating the breakeven price for purchased steer calves, remember that a death loss equal to 2% of the steer calf's purchase price is included in the budget and 6% interest is charged on the cost paid for the steer calves.

- a. Calculate the return left to purchase a steer calf, cover death loss, and pay interest. Write your answers in the blanks provided. (2 points each)

Total Receipts = \$   902.50  

950 @ 0.95 =

minus variable costs = \$ 304.43

minus total fixed costs = \$ 17.98

equals return left to purchase

steer calf, cover death loss,

and pay interest = \$   580.09  

- b. What is the breakeven price the Boones can pay for a 450 lbs. steer calf and cover death loss and interest? (2 points)

Breakeven price to purchase steer calf = \$   119.23   /cwt.

$$4.5 P + (2\% * 4.5P) + (6\% * 4.5P) + (6\% * (2\% * 4.5P)) - \$580.09 = 0;$$

$$4.5P + .09P + .27P + .0054P = \$580.09$$

$$4.8654P = \$580.09$$



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C. With the wide fluctuations in commodity prices and the current price outlook the Boones think that total 2010 cash inflows from crop and livestock sales could be 10% less than the projections used in the projected cash flow for 2010 (**pages R20 and R21 of the resource information**). Such a change would result in total cash inflows declining by \$336,025. Assume total annual cash inflow from crop and livestock sales is the only change in cash flows. All other cash inflows and outflows expect those associated with the operating loan will remain the same. (1 point each)

1. What is the percentage reduction in total cash inflows if this more pessimistic projection of crop and livestock sales occurs? Note: Round answer to two decimal places.

Percentage reduction in total cash inflows =   7.57   %  
 $\$336,025 / \$4,437,591 = X * 100 =$

2. Determine how this decline in revenue will change the ending operating loan amount and the ending bank account balance in the cash flow projections. Calculate and fill in the blanks in the following table. Note: Use whole dollar amounts. Tip: Remember to reduce total cash inflows

Total cash inflows	\$ <u>4,101,566</u>
\$ 4,437,591 - \$ 336,025 =	
minus Total cash outflows	\$ <u>3,461,601</u>
equals Cash Difference	\$ <u>639,965</u>
plus Beginning Bank Account Balance	\$ <u>(52,006)</u>
equals Cash Position	\$ <u>587,959</u>
minus Interest Payments	\$ 14,158
minus Principal Payments	\$ 1,320,816
plus Accumulated Operating Loan Borrowing	\$ 748,515
equals Ending Cash Balance	\$ <u>1,500</u>

End of Part VII – RISK MANAGEMENT

Total Possible Points = 30

POINTS EARNED PART VII =

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## PART VIII – FAMILY LIVING

Review the information from the Family Living (**page R22 of the resource information**) before answering the following questions.

A. Answer the following questions related to the Boones family living records. Write your answers on the blanks provided. (1 point each)

1. What was the Boones total non-farm income in 2008? \$ 27,312
2. How much did the Boones spend on education in 2009? \$ 11,820
3. What was the three-year average for total family living expenses? \$ 164,814
4. What was the state average for total income? \$ 141,452
5. How much did the Boones spend on food in 2007? \$ 10,701
6. What percent of the total family living expenses did the Boones spend on total personal taxes in 2009? 31.19 %  
Note: Round answer to two decimal places.  
 $\$ 64,969 / \$ 208,334 = X * 100 =$
7. What percent of the total income did farm withdrawals provide for the Boones family living expenses in 2008? 84.57 %  
Note: Round answer to two decimal places.  
 $\$ 149,727 / \$ 177,039 = X * 100 =$
8. For the three-year average what is the total family living expense per person in the Boone family? \$ 32,962.80  
 $\$ 164,814 / 5 =$
9. The Boone family's three-year average total income is less than the state average. Note: Circle the correct response. True **False**
10. The Boone family's three-year average for food is greater than the state average. Note: Circle the correct response True **False**

B. Assume the Boone family decides to reduce their family living expenses for 2010.

1. Circle the *three (3) annual expenses* that the Boones would find most difficult to reduce. (1 point each)
  - a. **Personal property taxes**
  - b. Contributions
  - c. **Life insurance premiums**
  - d. Clothing
  - e. Personal items
  - f. **Education**

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2. Circle the *three (3) annual expenses* that the Boones would most likely be able to reduce. (1 point each)

- a. **Entertainment/recreation**
- b. Health insurance premiums
- c. **Contributions**
- d. Personal utilities
- e. **Investments**
- f. Food

- C. Andrew has expressed an interest in returning to the farm (**Introduction on page R2 of the resource information**). The estate plan that Tinker and Mary use will be important to the future of the farm business. Answer the following questions by circling the most correct response. (1 point each)

1. What is an estate plan?
  - a. **A plan for financial security during retirement, the fair consideration of heirs, and the provisions for continuing the business.**
  - b. A plan for passing assets from one generation to the next.
  - c. A plan for how the farm will be sold.
2. In developing a plan for Andrew to join the business, it is important for him and his parents to agree on the *long-run direction* of the business. Which of the following tools can help with this?
  - a. Establishing short-term goals
  - b. Establishing a projected cash flow budget
  - c. **Developing a vision statement for the business.**
3. Real property can be held in which of the following ways?
  - a. Tenancy in common
  - b. Joint tenancy
  - c. Fee simple
  - d. A and B
  - e. **A, B, and C**
4. If Andrew's parents do not develop a will, the property they own at the time of death will be distributed using which procedure?
  - a. The oldest child receives their property
  - b. The property will be divided equally among their children.
  - c. **The laws of dissent for where they live.**

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5. When Andrew joins the family business, he would like to be an equal partner in the business with his mother and father. One way to create this partnership is for Andrew to purchase 1/3 of the business. Why is it unlikely that this plan will work?
  - a. **Based on the 2009 balance sheet, this plan will require Andrew to make a purchase of more than \$1,000,000 and Andrew is not likely to have the financial resources to make such a large purchase.**
  - b. There is not any financial assistance available to beginning farmers.

End of Part VIII – FAMILY LIVING

Total Possible Points = 21

POINTS EARNED PART VIII =

**PART IX – ANALYSIS OF THE FARM BUSINESS**

- A. The Boones are concerned with how their farm is performing relative to the other farms in their area. They contacted their farm business management instructor for regional averages of comparable farms. Review the Regional Farm Financial Scorecard (2009) - All Farms (**page R 26 in the resource information**). Compare the performance of the Boone Farm with the scorecard. Write an "X" in the range for each financial measure that indicates if the Boone Farm's financial measure shows them to be strong, average or vulnerable as compared to the regional scorecard. (Note: The scorecard provided no data for working capital, net farm income from operations, and capital replacement and term debt replacement margin) (1 point each)

<b>Farm Financial Scorecard (2009) - Boone Farm</b>				
Financial Measure	Boone Farm	Strong	Average	Vulnerable
<i>Liquidity</i>				
Current Ratio	2.90 :1	<b>X</b>		
<i>Solvency</i>				
Debt to Asset Ratio	0.34 :1	<b>X</b>		
Debt to Equity Ratio	0.51 :1	<b>X</b>		
Equity to Asset Ratio	0.66 :1	<b>X</b>		
<i>Profitability</i>				
Rate of Return on Assets (ROA)	19.04%	<b>X</b>		
Rate of Return on Equity (ROE)	25.20%	<b>X</b>		
Operating Profit Margin Ratio	0.10 :1		<b>X</b>	
<i>Repayment Capacity</i>				
Term Debt Coverage Ratio	8.25 :1	<b>X</b>		
<i>Financial Efficiency Ratios</i>				
Operating-Expense Ratio	0.75 :1		<b>X</b>	
Depreciation-Expense Ratio	0.04 :1	<b>X</b>		
Interest-Expense Ratio	0.01 :1	<b>X</b>		
Net Farm Income from Operations Ratio	0.19 :1		<b>X</b>	
Asset Turnover Ratio	1.03 :1	<b>X</b>		

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B. Evaluate each of the following statements as it relates to an analysis of the Boone Farm's business. Write a (+) on the blank provided before each true statement. Write an (O) on the blank before each false statement. (1 point each)

  0   Farm net worth decreased from 2005 to 2009

  +   The farm business is solvent

  0   The projected cash flow indicates accumulated borrowing will never reach a zero balance anytime in 2010

  +   The rate of return on assets (ROA) has improved from 2006 to 2009

  0   Total farm liabilities have decreased since 2005

  0   The family withdrawals have been decreasing since 2005

  +   Cash is adequate to service short term debt and other obligations

C. Evaluate each of the following statements as it relates to items the Boones should consider to improve their farm business. Write a (+) on the blank provided for each statements the Boones should consider to improve their farm business. Write a (O) on the blank before each statement they should not consider. (1 point each)

  +   Adjust crop and/or livestock sales or expenses to provide a more even cash flow

  +   Evaluate cash rent versus crop share lease alternatives

  +   Develop written farm and family goals and objectives

  0   Replace 100 acres of corn with 100 acres of soybeans on cash rented land

  +   Consider paying cash rents throughout the year, rather than in January, February, and March

  +   Develop a long-range marketing plan

  +   Maximize after-tax income

  +   Consider placement of yearling steers into feedlot and selling as slaughter steers

  +   Develop a financial plan to provide guidance on use of borrowed money

  +   Feed a corn and silage ration to steer calves to maximize returns per steer

End of Part IX – ANALYSIS OF THE BUSINESS
Total Possible Points = 30
POINTS EARNED PART IX = _____

**PART X – ECONOMIC PRINCIPLES**

## Cost and Return Analysis

## Input-Output Relationships (Estimating the Most Efficient Use of Inputs)

1. The Boone children have been conducting a plot test (**page R25 of the resource information**) on one of the farms. They have completed gathering the data and need your help in completing the following table (Table 1). Finish calculating the average production (APP) and marginal production (MPP) in Table 1.  
(Note : Round APP numbers to two decimal places. MPP numbers should be whole numbers.) (1 point each)

**Table 1: Physical Production Function**

Units of Input	Total Production TPP	Average Production APP	Marginal Production MPP
0	0	0	0
1	5	5.00	5
2	16	8.00	11
3	26	8.67	10
4	35	8.75	9
5	42	8.40	7
6	47	<b>7.83</b>	<b>5</b>
7	51	<b>7.29</b>	<b>4</b>
8	54	<b>6.75</b>	<b>3</b>
9	56	<b>6.22</b>	<b>2</b>
10	55	<b>5.50</b>	<b>-1</b>

2. While Table 1 is not quite the same level of output as might be the case in actual production, the children are determined to help their father make the right decisions about the amount of input that will maximize profit. Write your answers in the blanks provided. (1 point each)
- a. The boundary between Stage 1 and Stage 2 of production will occur at or between which level(s) of input?

  4 - 5   units of input

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- b. The boundary between Stage 2 and Stage 3 of production will occur at or between which level(s) of input?  
\_\_\_\_\_ **9 - 10** \_\_\_\_\_ units of input

- c. The profit maximizing level of input use will be found in what stage of production?

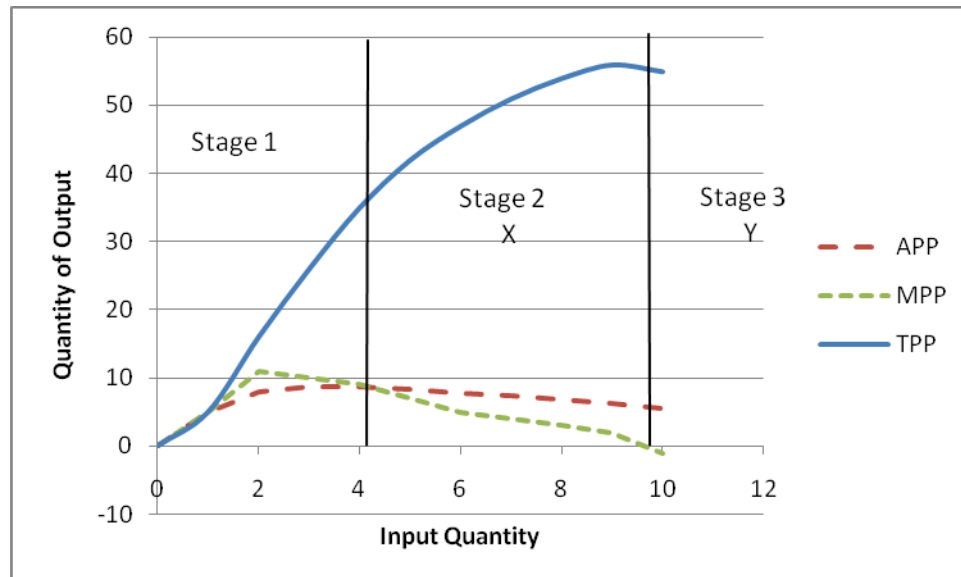
Stage **2**

- d. How many inputs would the Boones use, if the inputs were free?

Inputs: **9**

3. Label a graph of the data in Table 1.

- a. Write in where Stage 1, Stage 2, and Stage 3 occur. Place an "X" in the stage where you would always want to operate. Place a "Y" in the stage you would never operate in. (1 point each)



- b. Assuming you want to maximize profit, what decision rule would you use?  
Circle the correct response. (1 point)

- (1)  $AP = MP$
- (2)  $MVP = ARC$
- (3)  **$MC = MR$**
- (4)  $MIC < MVP$



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4. Assume that the input cost is \$30 per unit and the value of the soybeans is \$9 per bushel for the data in Table 1. Use the information in Table 2 to answer the following questions. (1 point each)

Table 2: Profit Maximizing Rule

Input Level (Stage 2)	MIC	MVP @ \$9	MVP @ \$9.90	MVP @ \$8.10
5	\$30.00	\$63.00	\$69.30	\$56.70
6	\$30.00	\$45.00	\$49.50	\$40.50
7	\$30.00	\$36.00	\$39.60	\$32.40
8	\$30.00	\$27.00	\$29.70	\$24.30
9	\$30.00	\$18.00	\$19.80	\$16.20

- a. What is the input level of the place where the profit will be the greatest or the loss would be the least? Write your answer on the blank provided.

input level   7  

- b. What is the best input level if the input cost stayed the same and the price of soybeans went up 10%? Write your answer on the blank provided.

input level   7  

- c. What is the best input level if the input cost stayed the same and the price of soybeans went down by 10%? Write your answer on the blank provided.

input level   7  

- d. The purpose of this exercise is to: Circle the correct response.

- (1) Determine how much input is left over
- (2) Determine whether soybean production is a viable use of capital
- (3) Determine that the price plays only a minor role in production/enterprise selection
- (4) Determine where the profit is the greatest or the loss is least**

End of Part X – ECONOMIC PRINCIPLES

Total Possible Points = 24

POINTS EARNED PART X =

Participant Number \_\_**KEY**\_\_\_\_

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