

Participant Number _____

State Abbreviation _____

Participant Name (please print clearly) _____ Key _____

Important: Before you start this portion of the event, please write your participant number and state abbreviation on the blanks provided at the top of *each page*.

2012 NATIONAL FFA FARM BUSINESS MANAGEMENT CAREER DEVELOPMENT EVENT

Page Number	Part	Area	Possible Points	Score
5	I	Financial Statements	21	_____
8	II	Budgeting	34	_____
10	III	Cash Flow Planning	35	_____
13	IV	Marketing	41	_____
15	V	Income Tax	24	_____
18	VI	Investment Analysis	33	_____
21	VII	Risk Management	27	_____
23	VIII	Analysis of the Farm Business	49	_____
25	IX	Economic Principles	36	_____
TOTAL POSSIBLE POINTS			300	
PARTICIPANT POINTS				_____

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PART I – FINANCIAL STATEMENTS

**NOTE: For the multiple choice questions, circle the correct response.
Each correct response is 1 point.**

1. This financial statement makes adjustments to cash receipts and expenses of a farm during a specified time period to arrive at net farm income from operations.
 - a. Balance sheet
 - b. Income statement**
 - c. Statement of owner equity
 - d. Statement of cash flow
2. Which of the following is not one of the basic financial statements?
 - a. Balance sheet
 - b. Income statement
 - c. Monthly bank statement**
 - d. Statement of owner equity
3. The 1040 Schedule F is an example of which type of income statement?
 - a. Cash Income Statement**
 - b. Accrual Adjusted Income Statement
 - c. Accrual Income Statement
 - d. Gross Income Statement
4. A balance sheet will list which of the following items:
 - a. Assets & Liabilities**
 - b. Receipts & Expenses
 - c. Expenses & Assets
 - d. Liabilities & Expenses
5. A farm business accounting period for January 1, 2011 to December 31, 2011 would be an example of what type of accounting period?
 - a. Calendar year accounting period**
 - b. Required accounting period
 - c. Monthly accounting period
 - d. Quarterly accounting period
6. Inventory changes and changes in the value of prepaid expenses would be used to calculate which of the following?
 - a. Net cash income from operations
 - b. Accrual adjusted net farm income from operations**
 - c. Gross cash income
 - d. Depreciation

7. Supplies are paid for during an accounting period, but at the end of the accounting period, the supply inventory is larger. This indicates which of the following?

a. **Cash expenses overstate actual expenses for the accounting period.**
b. Cash expenses understate actual expenses for the accounting period.
c. Cash expenses are an accurate measure of supply expenses for the accounting period.
d. Cash receipts are an accurate measure of supply expenses for the accounting period.

8. Which of the following items would be a farm business expense for an accounting period?

a. Cash used to purchase new machinery
b. **Cash used to purchase livestock feed**
c. Cash received for the sale of livestock
d. Cash used to purchase groceries

9. For the Lawrence farm, what was the net farm income for 2010?

\$42,678

10. What type of income statement is used in the Resource Information on page R4?

a. Cash income statement
b. **Accrual adjusted income statement**
c. Audited income statement
d. Gross income statement

11. What was the total amount of cash interest paid in 2011?

\$5,004

12. How much principal is scheduled to be paid on non-current liabilities in 2012?

\$21,650

13. In what month of 2011 were tree sales made?

a. January
b. **March**
c. June
d. There were no tree sales in 2011

14. During 2011, how much was the lowest monthly cash balance on the Lawrence farm?

\$6,516

15. In addition to records of revenues and expenses, maintaining records for which of the following can develop a more complete record system for the Lawrence farm?
- a. Records of crop yields
 - b. Records of sale prices
 - c. Records of fertilizer applied
 - d. All of the above**
16. The Lawrence farm purchased a tractor, pickup, and hay bailer in 2011. The expense associated with this purchase will be which of the following?
- a. The cash paid for the purchased items
 - b. The cash plus the value of any trade-in
 - c. Depreciation allowed during the first year**
 - d. The value of any trade-ins
17. Which of the following can help explain the difference between net cash income and net farm income from operations?
- a. The change in feed inventory reduced revenue
 - b. Depreciation increased expenses
 - c. The sale of capital items increased revenue
 - d. Change in inventory value of capital assets**
18. Current farm assets are typically valued at
- a. Cost
 - b. Market value**
 - c. Depreciated value
 - d. Cost less depreciation
19. In which months were payments made on non-current loans in 2011?

February**November****December**

End of Part I – FINANCIAL STATEMENTS

Total Possible Points 21

POINTS EARNED PART I _____

PART II - BUDGETING

PARTIAL BUDGET #1

James & Charlotte Lawrence Farm

The Lawrences have been raising corn silage to sell to a neighboring dairy. The Lawrences were wondering if they should raise more wheat since they are able to contract it for \$10.00/cwt or \$200/ton. The Lawrences can sell their corn silage for \$30/ton in the field. Their yields have been around 30 tons per acre. They estimate their expenses (variable and fixed) to be about \$565 per acre for corn silage.

Historically, the Lawrence's average wheat yield has been 110 bushels per acre. A bushel of wheat weighs 60 lbs, so this would be 6,600 lbs of wheat per acre. The Lawrences figure their total cost of wheat production to be about \$600 per acre. Calculate your answers on a per acre basis.

Use the Partial Budget below to determine if the Lawrences should switch from corn silage to wheat. Table values are 2 points each. Completion answers are 1 point.

Column One (Negative Effects)	Column Two (Positive Effects)
1. <u>Additional Costs</u> \$ 600 (producing wheat)	4. <u>Additional Returns</u> 110 bu/acre X \$6/bu = \$ 660 66 X \$ 10.00 = \$ 660
2. <u>Reduced Returns</u> \$ 900 (\$30/ton @ 30 tons/acre)	5. <u>Reduced Costs</u> \$ 565 – reduced cost production/acre
3. <u>Total Additional Costs and Reduced Returns</u> \$ 1,500	6. <u>Total Additional Returns and Reduced Costs</u> \$ 1,225
7. <u>Net Change in Income (line 6 minus line 3)</u> - \$ 275 (negative)	

1. Should the Lawrences raise wheat instead of corn silage? (Circle your response)

Yes **No**

2. What would the sale price of wheat need to be for the two crops to break even if all other figures stayed the same? **\$283.40 / ton or**

$$(\$600 + \$335)/110 = \$8.50 / \text{bu} \quad \text{or} \quad (\$600 + \$335)/66 = \$14.17 / \text{cwt}$$

3. If the corn silage only yields 28 ton per acre, which crop should they raise?

Corn silage

PARTIAL BUDGET #2

A major seed company has recently moved to this area and is contracting for seed beans. The Lawrences have been considering raising some dry beans rather than corn silage. They believe that the fixed costs would be pretty much the same for the two crops. Based on information from their land grant university, they estimate the operating costs for raising dry beans to be about \$510 per acre. The expected yield for beans in the area is about 2,400 lbs per acre, and the contract price is \$35/cwt. This would give an estimated income of \$840 per acre. The Enterprise Budget for silage corn shows us that they could expect an income of about \$900 per acre on the corn silage with operating expenses of around \$565 per acre.

Use the Partial Budget below to determine if the Lawrences should switch from corn to dry beans.

Column One (Negative Effects)	Column Two (Positive Effects)
1. <u>Additional Costs</u> \$ 510/acre beans	4. <u>Additional Returns</u> \$ 840 for beans
2. <u>Reduced Returns</u> \$ 900/acre corn silage	5. <u>Reduced Costs</u> \$ 565/ acre corn silage
3. <u>Total Additional Costs and Reduced Returns</u> \$ 1,410	6. <u>Total Additional Returns and Reduced Costs</u> \$ 1,405
7. <u>Net Change in Income (line 6 minus line 3)</u> - \$ 5.00 (negative)	

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1. Should the Lawrences plant beans? (Circle your response.) Yes **No**

2. If corn silage yields only 28 tons per acre, which crop should they raise?

 Beans

3. If the contract price for beans comes up \$1/cwt to \$36/cwt, would that change your initial recommendation on question #1? (Circle your response.) **Yes** No

End of Part II– BUDGETING

Total points possible 34

POINTS EARNED PART II _____

PART III – CASH FLOW PLANNING

In the Resource Information, you will find the cash flow statement for the James Lawrence Farm in 2011. Each three-month section of the cash flow (i.e. Jan, Feb, March) is considered a quarter of the statement. Using that information, answer the following questions for the farm. (Round percentages to tenth of a percent xx.x%) Completion questions are 1 point. Problems questions are 2 points.

1. Each month the farm needs to calculate whether there is a cash surplus or a cash deficit based on the income and expense for the month, and the cash balance at the beginning of the month. If there is a deficit, money will need to be borrowed by the operation.
 - a. Which quarter of the year generates the largest amount of cash for the farm? Quarter 4 or Oct, Nov, Dec
 - b. Which quarter of the year generates the smallest amount of cash for the farm? Quarter 2 or April, May, June
 - c. Which month has the largest end-of-month cash position for the farm?
November
 - d. Which month has the largest negative cash difference for the farm?
December
 - e. Which month has the smallest end-of-month cash position? June
 - f. How many months have a positive cash difference? 7
 - g. As of July 1, what was the gain or loss in cash position from the January 1 balance? (-) \$13,489 $\$6,516 - \$20,005 = \text{minus } (-) \$13,489$
 - h. What is the total gain or loss in cash position from the January 1 balance to December 31? \$45,811 $\$65,816 - \$20,005 = \$45,811$
2. What are the two largest outflow categories in this cash flow?
 - a. Machinery Purchases
 - b. Family Living

3. There is value in making comparisons between the percentages of certain categories in the cash flow. An individual producer may compare totals or individual sections of the cash flow. These percentages can then be compared to those of other producers.
- What percent of the total farm outflows are the outflows in the final quarter of the year? 45.0%
 $(\$57,451 + \$18,558 + \$28,309 = \$104,318) / \$231,659 = 45.0\%$
 - What percent of the total farm inflows are the inflows in the final quarter of the year? 53.9%
 $(\$104,641 + \$34,603 + \$10,264) = \$149,508 / \$277,470 = 53.9\%$
 - What percent of total inflows are the total outflows? 83.5%
 $\$231,659 / \$277,470 = 83.5\%$
 - What percent of total inflows is the ending cash balance? 23.7%
 $\$65,816 / \$277,470 = 23.7\%$
4. Did the debt increase or decrease during the year? increase
5. Name two categories in the cash flow that have the same dollar amount listed for each month? Labor Hired Withholding Taxes
6. Using total ending inflows and outflows before interest for the year determine the net cash as a percentage of total cash inflows. 18.3%
 $\$277,470 - (\$231,659 - \$5,004) = \$50,815$ $\$50,815 / \$277,470 = 18.3\%$
7. What percentage of total inflows is the non- farm income? 34.6%
 $\$96,002 / \$277,470 = 34.6\%$
8. What percent of total outflows are family living and tax withholdings? 17.4%
 $(\$23,003 + \$17,268 = \$40,271) / \$231,659 = 17.4\%$
9. If James had opted not to purchase the tractor (\$49,430) and the pickup (\$20,000) in this cash flow plan, what would the totals below be for the year? (The October Mach/Equip Sold value will not change.)
- Total Inflows \$237,470 $\$277,470 - \$40,000 = 237,470$
 - Total Outflows \$162,229 $\$231,659 - \$69,430 = \$162,229$
 - Ending Cash Balance \$95,246 $(\$69,430 - \$40,000 = 29,430) + \$65,816 = \$95,24$

End of Part III – CASH FLOW PLANNING	
Total possible points 35	POINTS EARNED PART III _____

PART IV - MARKETING

Answers for questions 1 through 20 are 1 point each.

1. Numbering 1 through 5, place in order the five stages in a complete "Production-Marketing System"

<u> 2 </u>	Processing
<u> 5 </u>	Consuming
<u> 1 </u>	Producing
<u> 4 </u>	Retailing
<u> 3 </u>	Wholesaling

2. Circle the three parts of total utility.

a. Product	d. Form
b. Place	e. Time
c. Processing	f. Price

For questions 3 – 20, potential fill-in-the-blank responses are listed after question 20.

3. Products have "utility to consumers if they meet a need and in the process provide satisfaction."

4. What law is it when the consumer will purchase more only at lower prices?
demand

5. It is important to recognize that the farmer is vulnerable to price variability brought on by weather , demand , and surplus .

Or exports , imports , yields . Any three of the six.

6. The difference between futures price and local price is basis .

7. The cost to carry past the point of harvest should cover interest and storage costs.

8. Traditionally, basis should cover the storage , interest and transportation costs.

9. A trader who expects the market to drop in price considers it to be a bear market.

10. When the market goes up day after day, traders say we are in a **bull** market.
11. A market characterized by few potential traders and few or infrequent trades is a **thin** market.
12. The maximum permitted price increase or decrease from the previous day's closing price is the **limit** price move.
13. The futures contract month closest to maturity is **nearby** delivery month.
14. The buying or selling of futures contracts as substitutes for later cash transactions to insure against price changes is **hedging**.
15. The willingness to buy a commodity at a specific price is the **bid**.
16. The amount of money that must be deposited when a producer holds a futures position is **margin**.
17. A quick advance in prices is a **rally**.
18. If a producer wants to take advantage of a rising market, he would purchase a **call** option.
19. The price at which options are purchased or sold at is **strike** price.
20. The buyer of a put option will make money if the futures price **falls**.

Potential fill-in-the-blank answers for questions 3 through 20. Answers can be used more than once.

Basis	Bear	Bid
Bull	Buy	Call
Decrease	Demand	Equilibrium
Exports	Falls	Futures
Hedging	Imports	Interest
Limit	Margin	Nearby
Options	Put	Rally
Rises	Satisfaction	Sell
Storage	Strike	Surge
Surplus	Thin	Transportation
Variable	Weather	Yields

Answers for questions 21 through 25 are 2 points each.

If James Lawrence were to expand his operation, there is the potential for him to produce 20,000 bushels of wheat to sell. The following items are for his consideration:

Harvest Price	\$ 7.20 / bu – August 31
Normal Basis	\$.30 / bu
Storage Cost	\$.05 / month
Interest Cost	\$.03 / month
January put	\$.20 @ \$8.00 Strike Price
January futures	\$ 7.95 / bu

21. The net price per bushel, if he forward contracted for January 31, is
\$7.25 **\$7.95 - .30 (basis) - .25 (storage) - .15 (interest)**
22. The net price per bushel, if he used the put and everything else stayed the same, is
\$7.10 **\$8.00 - .20 (put) - .30 (basis) - .25 (storage) - .15 (interest)**
23. The best sale would be a **January contract**.
24. How many futures contracts would be needed to hedge the crop? **4**.
25. What is the price if he sells directly from the field? **\$7.20**

End of Part IV– MARKETING
Total points possible 41 <div style="text-align: right;">POINTS EARNED PART IV _____</div>

PART V – INCOME TAX

Circle the correct answer. Each answer is worth 2 points.

1. The income tax was first used to pay for _____.
 - a. **the Civil War**
 - b. World War I
 - c. World War II
 - d. the Space Program
2. The tax form used to list farm income and expense items is
 - a. Schedule B.
 - b. Schedule D.
 - c. Schedule E.
 - d. **Schedule F.**
3. Based on the 2010 - 2011 Income statement, what was the farm share of the 2011 taxable income?
 - a. \$152,918
 - b. \$130,468
 - c. \$44,884
 - d. **\$30,990** $\$130,468 - (85,584 + 8,890 + 5,004) = \$30,990$
4. What form would show the sale of any of his cull cows?
 - a. Form 4562
 - b. Form 6245
 - c. **Form 4797**
 - d. Form 9747
5. What would the depreciation be if James Lawrence were to purchase 25 more beef cows for \$1,000 each using GDS straight line in the first year? Use the half-year convention.
 - a. **\$2,500**
 - b. \$5,000
 - c. \$10,000
 - d. \$25,000
6. What is the total percentage of Schedule F income that is paid for Social Security and Medicare taxes?
 - a. 7.65%
 - b. **13.3%**
 - c. 22.95%
 - d. 30.6%

7. For self-employed persons, the Deduction for Employer-Equivalent portion of the Self-Employment Tax is deducted on:
- a. Schedule F
 - b. Schedule D
 - c. Form 1040**
 - d. Form 1099
8. For self-employed individuals, what percent of their health insurance premium is deductible?
- a. 25%
 - b. 50%
 - c. 75%
 - d. 100%**
9. Good income tax management is to
- a. maximize after-tax income.**
 - b. have zero taxable income.
 - c. maximize total income.
 - d. minimize the tax obligation.
10. The accounting method used by most farmers for income tax is
- a. accrual.
 - b. corporate.
 - c. cash.**
 - d. deferred.
11. If James were to use the \$25,000 to purchase a used tractor instead of more cows, for how many years using GDS straight line depreciation with the half-year convention would he have a deduction?
- a. 5
 - b. 6
 - c. 7
 - d. 8**
12. Which of the following would not be a way to increase farm income in a low income year?
- a. Collect all accounts receivable.
 - b. Use slower depreciation.
 - c. Close out positive futures accounts.
 - d. Use the grain for an FSA non-recourse loan.**

End of Part V– INCOME TAX	
Total points possible 24	POINTS EARNED PART V _____

PART VI – INVESTMENT ANALYSIS

The Lawrence Farm wants to buy a 2012 Dodge 3500 Dually Big Horn package with the Cummins diesel to haul livestock and crop products around the area. They want to trade in their 2008 Chevrolet 2500. The dealer will give them \$25,000 trade-in and the price of the Dodge is \$49,000. The banker will give them a loan for six years with an interest rate of 4.00%. The payments are due in six annual payments. The Chevy pickup is paid for and has no loan balance. Complete the last row of the repayment schedule below. Then answer the questions that follow. Round your answers to the nearest cent. (2 points each in the table)

Payment	Annual Payment Amount	Interest Amount	Principal Amount	Balance
0				\$24,000.00
1	\$4,578.29	\$960.00	\$3,618.29	\$20,381.71
2	\$4,578.29	\$815.27	\$3,763.02	\$16,618.69
3	\$4,578.29	\$664.75	\$3,913.54	\$12,705.15
4	\$4,578.29	\$508.21	\$4,070.08	\$8,635.07
5	\$4,578.29	\$345.40	\$4,232.89	\$4,402.18
6	<u>\$4,578.27</u>	<u>\$176.09</u>	<u>\$4,402.18</u>	<u>\$0.00</u>

1. What is the accumulated interest? (2 points) **\$3469.72**
2. What is the cost for each \$100 you borrow? (2 points) **\$14.46**
3. When James shops for a loan, he should shop for which of the following? (1 point)
 - a. Interest Rate
 - b. Repayment Term
 - c. APR
 - d. a and b
 - e. b and c**

James is considering an alternative repayment method for the pickup loan. With this repayment method, the same principal payment is made each year. To arrive at the total payment for the year, interest on the outstanding balance is added to the constant principal payment. The price of the Dodge pickup and the trade-in value of the Chevy pickup is the same as in the previous problem, \$49,000 and \$25,000, respectively. The loan interest rate remains at 4% and the repayment period stays at six years. Annual payments are made on the loan. For the repayment schedule below, use this information to complete the last row of the repayment schedule below and then answer the questions that follow. Round your answers to the nearest cent. (2 points each in the table)

Payment	Annual Payment Amount	Interest Amount	Principal Amount	Balance
0				\$24,000.00
1	\$4,960.00	\$960.00	\$4,000.00	\$20,000.00
2	\$4,800.00	\$800.00	\$4,000.00	\$16,000.00
3	\$4,640.00	\$640.00	\$4,000.00	\$12,000.00
4	\$4,480.00	\$480.00	\$4,000.00	\$8,000.00
5	\$4,320.00	\$320.00	\$4,000.00	\$4,000.00
6	<u>\$4,160.00</u>	<u>\$160.00</u>	<u>\$4,000.00</u>	<u>\$0.00</u>

4. What is the accumulated interest? (2 points) **\$3360.00**

5. What is the cost for each \$100 borrowed? (2 points) **\$14.00**

Questions 6 – 8 are 1 point each

6. Why is the accumulated interest payment using this repayment method smaller than an amortized loan (the previous loan)?
- The initial size of the loan is smaller.
 - Principal payments are larger in the early repayment periods.**
 - The total payments are larger.

7. The time value of money is the concept of computing the value of money, either in the present or future, based on a given
- a. interest rate.
 - b. length of time.
 - c. inflation rate.
 - d. a and b**
 - e. b and c
8. Compounding is the process of determining which of the following?
- a. Future value of a current sum of money.**
 - b. Present value of a future sum of money.
 - c. Annual loan payment amount.
9. James is considering retiring in 10 years and wants to increase the amount of money that he has in his retirement account. He is planning on making a contribution of \$10,000 at the end of each year for the next 10 years. The interest rate on the account is 3.5%. Use this information and the Resource Information on page R15 to answer the following questions. (2 points each)
- a. What will be the value of the retirement account at the end of 10 years?

\$117,314 **$\$10,000 * 11.7314 = \$117,314$**
 - b. If the account could achieve a 7% rate of return, the value of the account at the end of 10 years will be \$138,164. How many times larger is the account in 10 years with a 7% rate of return compared to the account with a 3.5% rate of return?

1.18 times **$\$138,164 / \$117,314 = 1.18$**
10. What is the internal rate of return? (1 point each)
- a. An investment analysis method that estimates time required for the cash inflows from the investment to return the initial investment outlay.
 - b. An investment analysis method that weighs the present value of cash inflows against the present value of cash outflows.
 - c. An investment analysis method that determines the rate of return that equates the present value of cash inflows to the present value of cash outflows.**

End of Part VI– INVESTMENT ANALYSIS

Total points possible 33

POINTS EARNED PART VI _____

PART VII - RISK MANAGEMENT

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

	Description	Term
___2___	Unexpected circumstances where the probability of an event occurring can be empirically determined	1. Insurance Premium
___5___	The act of managing or controlling exposure to risk in order to meet preset objectives or risk exposure guidelines	2. Risk
___3___	Where the probability of an event occurring cannot be empirically determined	3. Uncertainty
___4___	Economic device whereby an individual or firm substitutes a certain cost for an uncertain financial loss	4. Insurance
___1___	The payment to an insurance company by a policyholder to purchase and maintain an insurance policy	5. Risk Management

2. The prices of winter wheat, dry beans, and corn silage tend to move together in the same direction. What is the statistical term for this? (Circle the correct answer.) (1 point)

- a. **Correlation**
- b. Variance
- c. Standard deviation
- d. Covariance

3. For a set of data, which of the items below is a statistical measure of variation? (Circle the correct answer.) (1 point)

- a. Correlation
- b. **Variance**
- c. Mean
- d. Median

4. In a set of data, which of the following refers to the number that occurs the most frequently? (Circle the correct answer.) (1 point)

- a. Mean
- b. Median
- c. **Mode**
- d. Average

Mr. Lawrence wants to improve the profitability from annual crop production on owned land. He is considering changing the acres of corn silage, commercial dry beans, and winter wheat produced. However, before this change is made, he wants to explore the risks associated with these enterprises. Using the enterprise budgets for these crops (pages R13, R14, R9) in the Resource Information, what is the net return above operating costs for each crop? (Round your answer to the nearest cent.) (1 point each)

Corn silage **\$ 335.09**Dry Beans **\$ 330.83**Winter Wheat **\$ 352.27**

5. If the objective is to maximize profits in the short run, which of the following crops should be grown? corn silage, commercial dry beans, or winter wheat (1 point)

Winter Wheat

6. Planting a combination of corn silage, commercial dry beans, and winter wheat would utilize which risk management strategy? (Circle the correct answer or answers.) (1 point each)
- a. Specialization
 - b. **Diversification**
 - c. Loss minimization
 - d. All of the above
7. James can obtain a contract that will assure the price of corn silage and dry beans at the price in the budget, but winter wheat prices are quite variable. How much can the price of winter wheat change before it provides the same net return above operating costs as corn silage? (Round your answer to the nearest cent.) (2 points)

Change in winter wheat price **\$ -.13** per bushel

8. A 5% change in which operating cost will increase total operating costs per acre the most for each of the following crops? (1 point each)
- a. Corn silage **Fertilizer or nitrogen**
 - b. Dry Beans **Custom hire & consultants**
 - c. Winter wheat **Fertilizer**
9. James uses revenue crop insurance to protect against adverse outcomes. This type of crop insurance helps protect against which of the following? (Circle the correct answer or answers.) (1 point each)
- a. **Low crop yields and prices**
 - b. High crop yields and prices
 - c. Increases in production costs
 - d. Failure of a grain buyer to make prompt payment upon delivery.

10. Using the winter wheat budget on page R9 of the Resource Information, assume irrigation costs increase by \$15 per acre. This will result in what percentage change of total operating costs per acre and what percentage change in net return above total costs? (Round your answer to the nearest hundredth.) (2 points each)

Percentage change of total operating costs **3.51%**

$$15 / 427.73 = 3.51\%$$

Percentage change in net return above all specified costs **-12.45%**

$$-15 / 120.52 = -12.45\%$$

11. When the wheat yield is 137 bushel per acre, each 1¢ increase in the price of wheat will provide what amount to net return above operating cost? (Round your answer to the nearest cent.) (2 points)

\$1.37 per acre

$$137 \text{ bu.} \times \$0.01 = \$1.37$$

12. If the winter wheat yield remains at 130 bushels per acre, what would the price per bushel need to be to match the net return above total costs for corn silage? (Round the answer to the next higher cent per bushel) (2 points)

\$ 6.07 per bushel

$$(\$659.48 + 128.59) / 130 = \$6.062 = \$6.07$$

(Next higher cent)

or

\$6.06 will be accepted

End of Part VII– RISK MANAGEMENT

Total points possible 27

POINTS EARNED PART VII _____

PART VIII – ANALYSIS OF THE FARM BUSINESS

1. James Lawrence has had discussions with his son regarding a potential expansion of the business. When considering an expansion, it is important to review all areas of the business and determine those with the greatest income potential. Additionally, it is important to consider the preferences of the operator(s) of the business. Added acres will assume the same fixed costs per acre as present acres. Given the information below for one possible scenario, and the Resource Information, calculate the following items. (2 points each)

Additional acres of crop land available = 160 Crops to plant on
 additional acres: Alfalfa – 40%, Winter Wheat – 30%, Corn Silage – 30%

Acres of additional Alfalfa	64 (160 x .4)
Additional net return from Alfalfa above total costs	\$15,601.28 (64 x 243.77)
Acres of additional Winter Wheat	48 (160 x .3)
Additional net return from Winter Wheat above total costs	\$5,784.96 (48 x 120.52)
Acres of additional Corn Silage	48 (160 x .3)
Additional net return from Corn Silage above total costs	\$6,172.32 (48 x 128.59)
Total additional net return above total costs	\$27,558.56 (15,601.28 + 5,784.96 + 6,172.32)
Total net farm income from operations after expansion	\$92,491.56 (64,933 + 27,558.56) or \$81,491.56

2. Calculate the ratios using 2011 data for the James Lawrence Farm balance sheet (page R3 and the 2011 Income Statement R4 & R5). For the Financial Efficiency Ratios, calculate the ratios for ending inventory using 2011 in the second column. (Round efficiency ratios to two decimal points.) (2 points each)

<i>LIQUIDITY</i>	Beginning	Ending
• Current Ratio	13.2	12.1
• Working Capital as % of GFI	163%	186%
<i>SOLVENCY</i>		
• Debt-to-Equity Ratio	.08	.09
• Debt-to-Asset Ratio	.07	.08
<i>FINANCIAL EFFICIENCY RATIOS</i>	2010	2011
• Operating-Expense Ratio	59.2	56.65
• Depreciation-Expense Ratio	5.1	5.13
• Interest-Expense Ratio	3.2	2.95
• Net Farm Income from Operations Ratio	32.6	35.27

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

___+___ The current ratio decreased from the beginning to the end of the year.

___0___ The debt to asset ratio has improved from the beginning to the end of the year.

___0___ Total liabilities have decreased from beginning to the end of the year.

___+___ All existing crop enterprise budgets indicate profitability.

___0___ Net cash farm income increased from 2010 to 2011.

4. Use the data in the Resource Information (pages R8, R11 & R12) to complete the following sensitivity table and determine the new return above total costs for the selected enterprises on the James Lawrence Farm. Enter the return after adjusting for the revenue decrease or the expense increase on a per unit basis. (2 points each)

Enterprise	10% Revenue Decrease	10% Total Cost Increase
Alfalfa Hay per acre	\$127.52 (243.77 – 116.25)	\$151.90 (243.77 - 91.87)
Aspen Trees per thousand trees	\$2,486.82 (2,986.82 – 500)	\$2,785.50 (2,986.82 - 201.32)
Beef – Recipient Cows per cow	\$189.26 (270.26 - 81.00)	\$216.29 (270.26 - 53.97)

End of Part VIII – ANALYSIS OF THE FARM BUSINESS

Total points possible 49

POINTS EARNED PART Viii _____

PART IX – ECONOMIC PRINCIPLES

Production Function

Part A: Multiple Choice

The Production Function is the most basic economic principle used in management today and the Lawrences are well aware of this concept and how important it is to the future of their operation. Following are some statements that Mr. Lawrence reviewed while determining appropriate management practices necessary for success. Circle the correct response or responses. Each correct response is 1 point.

1. An agriculture producer learns what from the Production Function?
 - a. **Output response to an input**
 - b. Whether or not to operate in the long run
 - c. How to allocate resources throughout an enterprise
 - d. All the above
2. There are two economic principles that make up the Production Function. (Circle the correct two)
 - a. The opportunity cost
 - b. **The law of diminishing returns**
 - c. The law of production
 - d. **The law of diminishing physical output**
3. What does marginal cost measure?
 - a. The output cost from production of one unit of input
 - b. The change in cost from one enterprise to another
 - c. **The change in total cost from adding another unit of input**
 - d. The change in cost by producing another unit of output
4. On the Production Function graph the $MC=MR$, what does this tell the producer?
 - a. Where the losses will be the least
 - b. Where change in cost and change in revenue are the same
 - c. Where the profits are the greatest
 - d. **All the above**
5. What is Stage II on the Production Function?
 - a. The lowest point
 - b. The highest point
 - c. The point of diminishing returns
 - d. **The decision making stage**

On the chart below, please complete the Production Function given and answer the questions that follow. The data represents the decision James will be making on the summer pasture rental of the 50 cow-calf pairs. Each answer in the chart is 2 points.

Part B: Production Function

Variable Input	Total Production	Average Production	Marginal Production
0	0	0	0
1	14	14.0	14
2	25	12.5	11
3	34	11.3	9
4	42	10.5	8
5	47	9.4	5
6	50	8.3	3
7	44	6.3	-6
8	37	4.6	-7
9	33	3.7	-4
10	31	3.1	-2

6. In which stage should the Lawrences produce? **Stage II**
7. Where do Stage II and Stage III separate? **Between 6 & 7**
8. James should never use more than **6** units of variable input.
9. The addition of more input beyond 7 units will cause the Total Production to:
(circle one)
 - a. Increase further
 - b. No effect
 - c. Stay the same
 - d. **Decrease further**

End of Part IX– ECONOMIC PRINCIPLES

Total points possible 36

POINTS EARNED PART IX _____