**Part 1: Financial Statements (46 points)**

**A. Match the term to its description(**2 points each)

|  |  |
| --- | --- |
| 1. \_\_\_i\_\_\_ Debt to Equity Ratio | a. costs associated with producing a product |
| 2. \_\_\_h\_\_\_ Net Capital Ratio | b. a measure of liquidity |
| 3. \_\_b\_\_\_\_\_Current Ratio | c. property or resources owned by a business |
| 4. \_\_\_f\_\_\_\_Receipts | d. the ability of a business to pay off debts without disrupting business |
| 5. \_\_\_a\_\_\_\_Expenses | e. Total assets minus total liablilities |
| 6. \_\_\_e\_\_\_\_Net Worth | f. Money received from sales of crops and livestock |
| 7. \_\_\_g\_\_\_\_Solvency | g. The long term financial position of a business |
| 8. \_\_\_\_d\_\_\_Liquidity | h. Total assets divided by total liabilities.  |
| 9. \_\_\_\_c\_\_\_Assets | i. the relationship between owned and borrowed capital |
| 10.\_\_\_\_j\_\_\_ Liabilities | j. money owed on a balance sheet |

B. Use information from the resource information to answer the following questions. Round all answers to two decimal places. (2 points each)

11. Lenders prefer a debt to equity ratio that is less than \_\_\_\_\_\_\_.

 a. .25

 b. .50

 **c. 1.0**

 d. 1.5

12. Which two ratios are measures of solvency?

 a. current and net owner equity

 b. return on assets and debt to equity

 c. current and interest expense

 **d. net capital and debt to equity**

13. Which of the following would not be included in a net worth statement?

 **a. the value of animals sold during the year**

 b. the value of breeding stock owned by the farm

 c. equipment loans

 d. Loan payments

14. An income statement will include which items?

 a. assets and liabilities

 **b. receipts and expenses**

 c. inflows and outflows

 d. variable and fixed costs

15. Which of the following is an example of a current asset?

 a. Breeding Sows

 b. Feeding equipment

 c. Land

 **d. Feeder pigs**

16. Which financial statement measures the profit of a business?

 a. Cash Flow

 b. Balance Sheet

 **c. Income Statement**

 d. Net Worth statement

17. Which term refers to current assets minus current liabilities?

 a. Cash accounting

 **b. Working capital**

 c. Current capital

 d. Current Ration

18. What was the net worth for the Bray farm at the end of 2013?

\_\_\_\_\_$2,020,489\_\_\_\_\_\_\_\_\_\_\_\_

19. Calculate the current ratio for the Brays.

 \_68,680/64,900\_=1.06\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

20. Calculate the Net Capital Ratio for the Brays.

 \_\_2,543,500/591,691=4.30\_\_\_

21. Calculate the Debt to Equity ratio for the Brays.

 \_591,691/2,020,489=0.29\_\_\_\_\_

22. How much cash interest was paid in 2013?

 \_12,000\_\_\_\_\_\_\_\_\_\_\_

23. Which percent of the Bray’s debt is due in 2014?

 \_64,900/526,791\*100%=12.32%\_\_\_\_\_\_\_\_\_\_\_\_\_

**II. Budgeting (44 points)**

A. General budgeting questions. (2 points each)

1. Which best describes an enterprise budget?

 a. A financial plan for the entire farm

 b. A tool used to analyze only changes in business operations

 **c. It shows the expected returns and costs with a specific type of production.**

 d. It shows a record of past returns and costs associated with production methods.

2. Which term is best defined as costs that must be paid and do not vary with the level of production in the short term.

 **a. fixed costs**

 b. variable costs

 c. enterprise costs

 d. business costs

3. Which of the following is an example of a variable cost?

 a. taxes

 **b. fertilizer**

 c. insurance

 d. interest expense

4. If land is rented for shares of production instead of cash, what is the result?

 a. Less risk for landlord and tenant

 b. More risk for landlord and tenant

 c. Less risk for the landlord and more for the tenant

 **d. More risk for the landlord and less for the tenant**

5. A management tool that shows projected costs and returns associated with some change in the farm business.

 a. Whole farm budget

 b. Enterprise budget

 c. Income expense budget

 **d. Partial budget**

6. Which of the following is not an example of a variable cost?

 a. Labor

 b. Seed

 c. Custom harvesting expense

 **d. Overhead**

B. Partial Budgets

The Brays are considering switching more acreage from corn to wheat production to ease the business of the spring planting season. Use the Wheat Enterprise Budget and the Corn Enterprise Budget to complete the partial budget on a per acre basis. Each answer is 2 points.

|  |  |
| --- | --- |
| Additional Costs:Wheat fixed costs $241.67Wheat Variable costs $216.91Subtotal= $458.58 | Additional Returns:Wheat grain $585.00Straw $150.00Subtotal= $735.00 |
| Reduced Returns:Corn $616Subtotal= $616 | Reduced Costs:Corn Operating Costs 354.59Corn Fixed costs 245.46Subtotal= $600.05 |
| Total AC+RR= $1074.58 | Total AR+RC= $1335.05 |
| Net Change in income: 260.47 |

1. Should the Brays switch their production to wheat? (1 point)

Yes

2. Should they still switch if the price for corn rises to $4.50? (2 points)

 Yes

Why? The net change in income would still be $156.47

The Brays are considering the purchase of a new combine as their current combine is 15 years old. It is expected that the new combine would be more efficient and they would gain $4000 more from grain that would no longer be lost in the field. Also, the new combine would reduce labor expenses by $3500. The new combine will have an annual cost of $25,000 to pay for it. The new combine will also result in reduced repair costs for the old combine by $5,000 annually. Since it is larger and can operate more efficiently, operating costs are reduced by $2500. Complete the following partial budget on an annual basis. Each answer is 2 points.

|  |  |
| --- | --- |
| Additional Costs:Annual combine cost $25,000Subtotal= $25,000 | Additional Returns:Grain $4000Subtotal= $4000 |
| Reduced Returns:Subtotal=0 | Reduced Costs:Labor $3500Repairs $5000Operating costs $2500Subtotal= $11,000 |
| Total AC+RR= $25,000 | Total AR+RC= $15,000 |
| Net Change in income: -$10,000 |

1. Should the Brays purchase the combine? (1 point)

No

**Part III: Cash Flow Planning (34 points)**

A. Use the 2013 Projected Cash Flow pages to answer the following questions about the Brays projected cash flows. (1 point for each answer)

1. Which month has the largest positive cash position for the farm?

 October

1. Which month has the largest negative cash position for the farm?

 September

1. Which months show a negative cash position?

Jan., Mar, Apr, May, June, Jul, Aug, Sep

1. Which receipt item generates the most inflows?

Feeder Calves

1. Which operating expense item is the greatest?

Labor

1. Does the operation have a positive cash flow for the year? **Yes** No
2. How much money is projected to be spent on interest payments for the year?

 $ 12,000

1. Would the operation need to borrow more or less money at the end of the year?

 Less

1. What are the total cash inflows for May?

 1154

1. What are the total cash outflows for February?

 840

B. Place an O in front of each item that should be included in a cash flow and an X for each item that should not be included in a cash flow. (1 point each)

1. \_\_\_\_\_X\_\_\_\_\_\_\_\_ Accounts Receivable
2. \_\_\_\_\_O\_\_\_\_\_\_\_\_ Operating Loan payments
3. \_\_\_\_\_X\_\_\_\_\_\_\_\_ Operating loan balance
4. \_\_\_\_\_X\_\_\_\_\_\_\_\_ The value of breeding stock owned.
5. \_\_\_\_\_O\_\_\_\_\_\_\_\_ Pre-purchased feed that will be bought in 2014, but not received until 2015.
6. \_\_\_\_\_O\_\_\_\_\_\_\_\_ Labor expenses
7. \_\_\_\_\_O\_\_\_\_\_\_\_\_ Taxes
8. \_\_\_\_\_O\_\_\_\_\_\_\_\_ Feed
9. \_\_\_\_\_O\_\_\_\_\_\_\_\_ Maintenance costs
10. \_\_\_\_\_O\_\_\_\_\_\_\_\_ Crop insurance payments

C. Complete the following questions related to the Bray’s cash flow statement. (2 points each) Round all answers to 2 decimal places.

1. Which quarter has the greatest positive cash difference?

 a. 1st

 b. 2nd

 c. 3rd

 **d. 4th**

2. What percent of total inflows are the inflows in the fourth quarter?

\_\_\_228,428/260,992\* 100%=**87.52%\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

3. What percent of total inflows is the ending cash balance?

\_\_\_\_37,692/260,992\*100%=**14.44%\_\_\_\_\_\_\_\_\_\_**

4. What percent of total inflows are total outflows?

\_\_\_223,300/260,992\*100%=**85.56%\_\_\_\_\_\_\_\_\_**

If the Brays were to pay cash for a new piece of equipment for $40,000 in December, recalculate the following areas.

5. Total cash outflows \_\_\_\_263,300\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. December cash difference \_\_\_-58,822\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. Ending cash Balance \_\_\_\_\_9,692\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part IV: Marketing and Economic Principles (35 points)**

1. Matching: Match the term with the correct definition (2 points each)

|  |  |
| --- | --- |
| 1. \_e\_\_\_\_\_Margin | a. a written agreement to buy and receive or sell and deliver a commodity at a future date |
| 2. \_\_a\_\_\_\_Futures Contract | b. all the economic activities involved in preparing and positioning the product for consumers. |
| 3.\_\_\_j\_\_\_ Option | c. satisfaction |
| 4.\_\_\_g\_\_\_Hedging | d. The option to sell a commodity at a certain price within a certain time. |
| 5.\_\_\_\_f\_\_Strike price | e. the amount of money deposited to secure futures contracts |
| 6.\_\_b\_\_\_\_Marketing | f. the cost to purchase an option. |
| 7.\_\_\_d\_\_\_Utility | g. the buying or selling of futures contracts to protect against price changes. |
| 8.\_\_\_i\_\_\_ Bear Market | h. a positive market outlook |
| 9.\_\_\_h\_\_\_Bull Market | i. a negative market outlook |
| 10.\_\_d\_\_\_Put | j. a formal contract that gives the right to buy or sell a commodity at a certain price. |
|  |  |

1. Multiple Choice: (2 points each)

1. What is the law that says that consumers will purchase more at lower prices

 a. Economics

 b. Price

 **c. Demand**

 d. Supply

2. A buyer who wants to protect her costs with options would purchase a

 a. Margin

 **b. Call**

 c. Put

 d. Basis

3. The difference between the local cash price and the futures market is the

 a. average

 **b. basis**

 c. margin

 d. utility

4. The main goal of a good marketing plan is to

 a. Do better than the average producer

 b. Keep costs low

 c. Understand national markets

 **d. Reduce risks**

5. Products have \_\_\_\_\_\_\_\_\_\_\_ to consumers if they meet a need and in the process provide satisfaction

 **a. Utility**

 b. Usefulness

 c. Equilibrium

 d. Basis

C. Number the following items from 1 through 5 in the correct order that they rank in the five stages of the complete production marketing system. (1 point each)

\_\_\_\_\_5\_\_\_\_\_\_\_\_ Consuming

\_\_\_\_\_1\_\_\_\_\_\_\_\_ Producing

\_\_\_\_\_3\_\_\_\_\_\_\_\_ Wholesaling

\_\_\_\_\_2\_\_\_\_\_\_\_\_ Processing

\_\_\_\_\_4\_\_\_\_\_\_\_\_ Retailing

**Part V: Investment Analysis. (48 points)**

1. Amortization schedule

The Brays need to purchase a new baler to replace their old baler. They will trade in their current baler which has a value of 4,500. The cost of the new baler is 30,500. They will finance the cost with a five year loan at 4.5% interest. Complete the amortization table below. Round all answers to the nearest cent. (Two points per answer)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Payment number | Annual Payment amount | Interest payment | Principal payment | Loan Balance |
| 0 | 0 | 0.00 | 0.00 | 26,000.00 |
| 1 | 5,922.58 | **1170.00** | 4752.58 | 21,247.42 |
| 2 | 5,922.58 | **956.13** | **4,966.45** | **16,280.97** |
| 3 | 5,922.58 | 732.64 | 5,189.94 | **11,091.03** |
| 4 | 5,922.58 | **499.10** | 5,423.49 | 5,667.54 |
| 5 | 5,922.58 | 255.04 | **5667.54** | 0 |
|  |  |  |  |  |

1. (2 points each)
2. How much is the total cost of the loan? $ 29,612.90
3. How much interest is paid over the life of the loan? $3,612.9 \_\_\_\_\_\_\_
4. What percentage of the total amount paid is interest expense?

3,612.9/29,612.9\*100%=**12.20%**

1. Which payment schedule would cause you to pay the least interest?
	1. **Monthly**
	2. Quarterly
	3. Semi annual
	4. Annual

The Brays are also looking at a difference repayment method for the baler. All of the values would remain the same. The interest rate would still be 4.5% and they would pay it over 5 years. This method would use a constant principal payments. Complete the following table for this method. Round answers to the nearest cent. (2 points each)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Payment number | Annual Payment amount | Interest payment | Principal payment | Loan Balance |
| 0 | 0 | 0.00 | 0.00 | 26,000.00 |
| 1 | **6,370.00** | 1170.00 | 5,200.00 | 20,800.00 |
| 2 | 6,136.00 | **936.00** | 5,200.00 | 15,600.00 |
| 3 | **5902.00** | **702.00** | **5,200.00** | **10,400.00** |
| 4 | 5,668.00 | 468.00 | 5,200.00 | 5,200.00 |
| 5 | 5,434.00 | **234.00** | 5,200.00 | 0 |
|  |  |  |  |  |

1. Which method has the least amount of interest paid? ( place an ‘X’ to mark)

Equal total payments(method 1) \_\_\_\_\_\_\_\_

Equal principal payments (method 2) \_\_X\_\_\_\_\_\_

2. Explain why your answer has less interest paid.

**More principal is paid early in the loan so less interest is calculated later in the loan**

C. Refer to the Financial Coefficient table to answer the questions.

(2 points each.)

1. What would the value be for $10,000 invested at 6.0% with compounding interest for 21 years? \_\_\_3.3996\*10,000=$**33,996**\_\_\_\_\_\_\_\_\_\_\_\_
2. If the Brays were looking at a $20,000 equipment loan amortized for 5 years with an interest rate of 6%, what would their annual payment be?

\_\_\_\_\_\_\_.2374\*\_20,000=**4,748**\_\_\_\_\_\_\_\_

3. What is the present value of $100 in 10 years at 6% interest? \_\_\_\_\_.5584\*100=**55.84**\_\_\_\_\_\_\_\_\_\_\_\_

**Part VI: Business Organizations (20 points)**

1. (2 points each)
2. Most farm businesses are which type of business?
	1. Corporation
	2. LLC
	3. Partnership
	4. **Sole Proprietorship**
3. Which of the following is an advantage of a sole proprietorship?
	1. **Decisions can be made quickly**
	2. There is limited liability
	3. Greater available capital
	4. Ownership is easily transferred
4. Which of the following is a disadvantage of a farm corporation?
	1. Decisions can be made quickly
	2. Ownership cannot be easily transferred
	3. Capital is limited
	4. **They are costly to organize**
5. Which of the following is an advantage of a partnership?
	1. Liability is limited
	2. **Labor and management decisions can be divided**
	3. Ownership is easily transferred
	4. The opportunity for tax advantages
6. In a cooperative, what is the return of profits to members called?
	1. Stock payouts
	2. Investment return
	3. **Patronage refund**
	4. Income
7. Which of following is an advantage of a farm corporation?
	1. Decisions can be made quickly
	2. Disagreements are minimized
	3. **Limited liability**
	4. Communication is easier
8. In this business structure the business entity is created when two or more persons join together to conduct a business and to share in its profits and losses.
	1. Corporation
	2. LLC
	3. **Partnership**
	4. Sole Proprietorship
9. In this business structure an individual owns, manages and assumes the risk and gains the profits of the business
	1. LLC
	2. Subchapter S proprietorship
	3. Partnership
	4. **Sole Proprietorship**

9. This type of business is owned and controlled by member-patrons

 a. Corporation

 **b. Cooperative**

 c. Partnership

 d. Sole Proprietorship

10. Which business type is most easily transferred upon the death of an owner?

 **a. Corporation**

 b. Limited Partnership

 c. Partnership

 d. Sole Proprietorship

**Part VII. Risk Management (26 points)**

1. Match the type of risk from the right with the action that reduces risk. Each answer may be used multiple times. (1 point each)

|  |  |
| --- | --- |
| Action | Type of risk |
| \_\_\_\_c\_\_\_ Shifting from a variable rate to a fixed rate loan. | a. Production risk |
| \_\_\_b\_\_\_\_Purchasing options to market grain crops | b. Marketing risk |
| \_\_a\_\_\_\_\_Installing an irrigation system | c. Financial risk |
| \_\_\_c\_\_\_\_Renting land instead of purchasing it. | d. Legal risk |
| \_\_\_c\_\_\_\_Reducing the amount of money borrowed | e. Human resource risk |
| \_\_\_d\_\_\_\_Forming a corporation instead of a sole proprietorship |  |
| \_\_\_a\_\_\_\_Purchasing crop insurance |  |
| \_\_\_e\_\_\_\_ Training employees |  |
| \_\_\_a\_\_\_\_ Adding more crops to diversify |  |
| \_\_\_a\_\_\_\_ Renting on shares of production instead of cash |  |
| \_\_\_d\_\_\_\_purchasing liability insurance |  |

1. Use the enterprise budgets to consider the following questions to determine the Bray’s risks associated with their operation. (3 points each).
2. A 2% change in which cost item on the corn enterprise budget would create the largest percentage change in total operating costs? \_\_\_Equipment\_\_\_\_\_\_\_\_\_\_\_
3. What is the breakeven price for Corn to cover all costs? \_\_\_\_(354.59+245.46)/160=**$3.75**\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. On the Beef cow calf enterprise budget, how would the income over all costs change if the cost for pasture increased by 50%?

**\_Decrease by $75 to -$24.86**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is the breakeven price for steer calves to cover total costs? \_\_325.1+(1100P\*.48)+123.75=1148.34 Price=\_**$1.32**\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. What price per bushel of oats is needed to provide the same returns above all specified costs as wheat? \_P\*70+100=334.72 **P=$3.35**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part VIII. Economic Principles (47 points)**

A. Multiple Choice: Answer the following questions on the production function. (2 points each)

1. What can an agriculture producer learn from the production function?

 a. How to distribute resources in an enterprise

 b. The true value of commodities

 **c. Output response to an input**

 d. Long-term financial stability

2. On the Production function graph, the MC=MR, what does this tell producer?

 a. Where the losses will be the greatest

 b. Where change in cost and change in revenue are the same

 c. Where profits are the greatest

 **d. All the above.**

3. What does marginal cost measure?

 **a. The change in cost by adding another unit of input.**

 b. The output cost from production of one unit

 c. The change in cost by producing another unit of input

 d. The change in profit by producing another unit of input

4. Why should you know how markets cycle?

 **a. To now the best season to buy or sell**

 b. To increase risks

 c. To Lower inputs

 d. All the above

5. What is the law of supply?

 a. The lower the demand, the higher the price

 **b. The higher the price, the higher the quantity supplied will be.**

 c. The lower the price, the higher the quantity supplied will be

 d. The higher the price, the lower the quantity supplied will be.

Use the chart to answer questions 6-10



6. In which stage of the production function should producers be?

 a. Stage 1

 **b. Stage 2**

 c. Stage 3

7. In which stage is total product maximized?

 a. Stage 1

 b. Stage 2

 c. Stage 3

 **d. The end of stage 2 and the beginning of stage 3.**

8. In which stage is average product increasing?

 **a. Stage 1**

 b. Stage 2

 c. Stage 3

 d. The end of stage 2

9. Which stage begins when marginal product equals average product?

 a. Stage 1

 **b. Stage 2**

 c. Stage 3

10. What affect will an increase in the cost of inputs have on the production curves if nothing else changes?

 a. The marginal product curve will peak later.

 b. The average product curve will peak later.

 **c. The stages will all begin sooner.**

 d. All the above.

B. Matching: Match the term to its description. (1 point each)

|  |  |
| --- | --- |
| 1. \_\_\_d\_\_\_ Output | a. as the amount of one input is added in production, the outputs will increase, reach a maximum, and then decline |
| 2. \_\_f\_\_\_\_ Input | b. The excess of receipts over the payment of all costs |
| 3. \_\_e\_\_\_\_Average Physical Product | c. The change in total output due to the use of more unit of input |
| 4. \_\_\_c\_\_\_Marginal Physical Product | d. The quantity of goods and services produced |
| 5. \_\_\_g\_\_\_Total Physical Product | e. Total units of output divided by the amount of input |
| 6. \_\_\_a\_\_\_Diminishing Marginal Returns | f. A factor of production that is added, such as land, labor, capital or raw materials |
| 7.\_\_\_b\_\_\_\_Profit | g. Output that can be achieved with various levels of production |

B. Complete the blanks in the production function table for adding fertilizer to corn. Round answers to two decimal places. (2 points each)

|  |  |  |  |
| --- | --- | --- | --- |
| Input | Total Production | Average Production | Marginal Production |
| 0 | 0 | 0 | 0 |
| 1 | 50 | 50 | 50 |
| 2 | 110 | **55** | 60 |
| 3 | 170 | **56.67** | 70 |
| 4 | 210 | 52.5 | **40** |
| 5 | 220 | 44 | **10** |
| 6 | **225** | 37.5 | 5 |
| 7 | 215 | **30.71** | **-10** |
| 8 | 200 | **25** | **-15** |
| 9 | 180 | 20 | **-**20 |
| 10 | 150 | **15** | -30 |