

Multiple Choice. Circle the best answer. Put a square around your second choice if you want. Half-credit is given for second choice, no penalty.

1. Assume that you are preparing an enterprise budget to evaluate the profitability of feeding yearling beef steers from 750 pounds to 1,250 pounds. You place an opportunity cost on **all** required inputs and resources. This method allows you to: **(4 pts.)**
 - a. Determine if the cash inflows will be great enough to support the cash outflows
 - b. Compare the profitability of feeding yearling steers with other farm enterprises on an equal basis
 - c. Estimate how large your annual operating loan will need to be
 - d. Show your lender that you have the ability to repay the loan used to purchase the steers

2. A farm manager's tax management goal should be to: **(4 pts.)**
 - a. Minimize the marginal tax rate
 - b. Maximize Section 179 "expensing"
 - c. Maximize before tax net income
 - d. Maximize after tax net income

3. A cash flow budget is useful for: **(4 pts.)**
 - a. Estimating Net Farm Income
 - b. Scheduling debt payments
 - c. Calculating the current ratio
 - d. Income tax planning
 - e. A and C
 - f. B and D
 - g. All of the above

4. Which of the following is **not** an important factor used by lenders when evaluating the loan decision for a potential borrower? **(4 pts.)**
 - a. Personal Character
 - b. Available Collateral
 - c. Gross Farm Sales
 - d. Repayment Capacity
 - e. Management Ability

5. What would be the best decision rule to use if a farm manager were trying to determine the profit maximizing level of fertilizer to apply for producing corn? **(4 pts.)**
- Total Revenue = Total Cost
 - Marginal Input Cost = Marginal Value Product
 - Average Fixed Costs = Input Price
 - Input Price = Output Price
6. The value of the Loan Deficiency Payment (LDP) is: **(4 pts.)**
- The difference between the County Loan Rate and the current Posted County Price (PCP)
 - The difference between the National Average Market Price and the National Target Price
 - The difference between the local posted elevator price and the National Target Price
 - The difference between the futures price and the local posted elevator price
7. Which of the following is **not** considered a method to motivate high performance from an employee? **(4 pts.)**
- Provide favorable job title
 - Assign added responsibilities as employee gains experience
 - Share unpleasant jobs
 - Critique poor performance in public
8. Due to the current high corn and soybean prices and the potential for a wet spring, you want to evaluate the economic benefit/cost of purchasing a new, larger row crop planter for \$25,000. You estimate that this new planter will allow you to plant the crop in less time (plant more acres per day with fewer break downs) and increase average crop yields. You have also already estimated the net cash flow for each year you plan to own and operate the new planter (see below). What is the *Net Present Value* for this purchase using a 8.5% discount factor? **NOTE: Assume that the planter has zero salvage value to keep the analysis simple! See attached Table 4 for appropriate factors. (6 pts.)**

Year	Net Cash Flow	Present Value Factor	Present Value
1	\$3,740		
2	\$4,360		
3	\$5,970		
4	\$4,620		
5	\$7,490		
6	\$8,180		
	\$34,360	Total	
Less Initial Investment			
Net Present Value			
Internal Rate of Return (IRR)			8.6793

9. If the calculated Net Present Value (NPV) from an investment, like the one in Question 8, was negative, this means: **(4 pts.)**
- The price of the initial investment is too high
 - The estimated cash inflows are not enough to pay the estimated cash outflows
 - The estimated return from the asset is less than the discount factor
 - The real interest rate is too high
10. Assume that you are preparing a cash flow budget for the 2007 production season. Your first analysis shows that the total annual cash inflows are less than the total annual cash outflow, so there is a projected annual cash deficit. Which of the following decisions would **not** improve the projected annual cash flow? **(4 pts.)**
- Delay capital purchases
 - Sell additional stored grain produced in 2006
 - Sell unused machinery
 - All of the above would improve the projected annual cash flow
 - None of the above would improve the projected annual cash flow
11. Assume that you are evaluating the purchase of the new planter discussed in Question 8. Given the following information, how much is the first year's estimated depreciation using the Sum-Of-Year's Digits (SOYD) depreciation method? **(4 pts.)**

List price for new planter	\$26,500
Purchase price for new planter	\$25,000
Years of Ownership	8 Years
Salvage Value after 8 years	\$ 9,500
Down Payment (40%)	\$10,000
Annual Principle Payment (5 years)	\$3,000
Loan Interest Rate	8%
Opportunity Cost of Owner Equity	9%

- \$ 1,940
 - \$ 2,100
 - \$ 3,330
 - \$ 3,440
 - \$ 5,550
12. The MACRS depreciation method used by the Internal Revenue Service (IRS) typically results in higher annual depreciation expense than the methods commonly used by economists and accountants. The primary reason this happens is because: **(4 pts.)**
- MACRS depreciation factors are larger than those commonly used by economists and accountants
 - The IRS assumes a salvage value of zero
 - The IRS requires shorter useful lives than economists and accountants
 - Economists and accountants are typically more financially conservative

You are considering leasing additional land for the 2007 production season and the land owner has offered three different lease options; A) fixed cash lease, B) crop share lease or C) variable cash lease. You have prepared enterprise budgets to compare each of these land lease options assuming normal yields or poor yields and current high market prices or long term average market prices. You have also assigned subjective (personal) probabilities (odds) to each of these potential outcomes. The projected net income per acres is summarized below. Answer Questions 13 – 15 using this information.

Fall Market Price Conditions	Subjective Probabilities	Net Income/A. for Fixed Cash Lease	Net Income/A. for Crop Share Lease	Net Income/A. for Variable Cash Lease
		(A)	(B)	(C)
Poor Yield & Average Price	0.10	-55.00	-35.00	-45.00
Poor Yield & Current Price	0.25	-25.00	-15.00	-20.00
Normal Yield & Average Price	0.40	65.00	45.00	55.00
Normal Yield & Current Price	0.25	110.00	65.00	90.00
Expected Value		41.75	27.00	35.00
Minimum Value		-55.00	-35.00	-45.00
Maximum Value		110.00	65.00	87.50
Range		165.00	100.00	132.50

13. Which strategy would you select if you were using the *Most Likely Outcome* risk decision rule? (2 pts. - no points for second choice)
- Strategy A: Fixed Cash Lease
 - Strategy B: Crop Share Lease
 - Strategy C: Variable Cash Lease
 - None of the above
14. Which strategy would you select if you were using the *Maximum Expected Value* decision rule? (2 pts. – no points for second choice)
- Strategy A: Fixed Cash Lease
 - Strategy B: Crop Share Lease
 - Strategy C: Variable Cash Lease
 - None of the above
15. Which strategy would you select if you were using the *Safety First* risk decision rule? (2 pts. – no points for second choice)
- Strategy A: Fixed Cash Lease
 - Strategy B: Crop Share Lease
 - Strategy C: Variable Cash Lease
 - None of the above

16. Assume you agree to lease the additional land discussed above and use a fixed cash lease agreement. You pay one half of the lease on March 1, 2007, and pay the remaining half of the lease on January 15, 2008. If you prepare an **accrual** Profit and Loss Statement (Income Statement) for January 1 through December 31, 2007, the January 15, 2008, lease payment would: **(4 pts.)**
- Be included as an Operating Expense
 - Not be included as an Operating Expense
 - Be included as an Accounts Receivable
 - Not be included as an Accounts Receivable
17. Which of the following is **not** a machinery ownership expense that is included in a whole farm budget? **(4 pts.)**
- Annual repair and maintenance costs
 - Annual principle payments on machinery debt
 - Estimated annual depreciation expense
 - Annual interest payments on machinery debt
18. Which of the following is **not** considered an advantage of a crop share lease for the tenant, when compared to a fixed cash lease? **(4 pts.)**
- Accessing management information from land owner
 - Shared risk of yield and/or price variability
 - Determining appropriate crop share percentage with out of state land owner
 - Shared cost of variable production inputs
19. It is highly recommended that a written land leasing agreement be used, rather than an oral or verbal agreement. List **two** items or contract terms that should be included in a written land lease agreement. **(4 pts.)**
20. Assume that the taxable net income from your farm was \$35,000 for 2006. This places you in the 15% federal income tax bracket and the 6.8% Iowa state income tax bracket. Assume that all of this income is from farm operations, so it is classified as self employment earnings. The Medicare tax rate is 2.9% and the Social Security tax rate is 12.4%. What is your estimated marginal tax rate? **(4 pts.)**
- 15.0 %
 - 21.8 %
 - 34.2 %
 - 37.1 %

21. Please complete the summary below and calculate the 2006 Accrual Adjusted Net Farm Income using the 2005 – 2006 financial information reported on pages 8 through 12.

(16 Points)

Total Cash Income			\$	
Accrual Adjustments			Net Change in Inventories	
Inventories	Ending Values	Beginning Values		
Crops: Corn, Soybean & Silage	\$	\$		
Cattle	\$	\$		
Market Hogs	\$	\$		
Sows, Boars & Gilts	\$	\$		
Sub-Total	+ \$	- \$		\$
Total Cash Expenses				- \$
Machinery Depreciation		\$	12,012	
Hog Facilities and Equipment Depreciation		\$	18,000	
Cattle Feeding Equipment Depreciation		\$	1,250	
Total Depreciation			\$	
2006 Net Farm Income (before tax)			\$	

22. What is the Debt to Asset Ratio for this farm in 2006? **(4 pts.)**

- 0.50
- 0.51
- 0.78
- 0.99

23. What is the Current Ratio for this farm in 2006? **(4 pts.)**

- 0.78
- 0.79
- 1.26
- 1.29

Extra Credit: What is the Rate of Return on Assets (ROA) for this farm in 2006? Assume the opportunity cost of the farm manager's labor is \$26,400 and the opportunity cost for his/her management is \$28,000 . **(4 pts.)**

- a. 1.9 %
- b. 3.6 %
- c. 5.1 %
- d. 5.9 %

Extra Credit: Please provide a definition of the term "opportunity cost" that your mother would understand. **(4 pts.)**

Balance Sheet

(Book Value)

December 31, 2005

<i>Assets</i>		<i>Liabilities</i>	
<i>Current</i>		<i>Current</i>	
Cash on hand	\$ 224	Operating Loan	\$ 0
Corn	\$ 5,396	Feeder Cattle	\$ 242,392
Soybeans	\$ 14,340	Next Machinery Principle Payment	\$ 0
Silage	\$ 0	Next Combine Principle Payment	\$ 0
Cattle	\$ 242,392	Next Swine Facility Principle Payment	\$ 32,400
Market Hogs	\$ 105,948	Next Land Principle Payment	\$ 16,513
Total Current	\$ 368,300	Total Current	\$ 291,305
<i>Intermediate</i>		<i>Intermediate</i>	
Sows, Boars & Gilts	\$ 25,378	Machinery	\$ 0
Machinery	\$ 107,617	Combine	\$ 0
Combine	\$ 0	Total Intermediate	\$ 0
Total Intermediate	\$ 132,995	<i>Long Term</i>	
<i>Long Term</i>		Swine Facilities	\$ 194,400
New Swine Facilities	\$ 315,750	Land	\$ 377,986
Land	\$ 840,000	Total Long Term	\$ 572,386
Improvements	\$ 32,500	Total Liabilities	\$ 863,691
Total Long Term	\$ 1,188,250	Net Worth	\$ 825,854
Total Assets	\$ 1,689,545	Total Liabilities & Net Worth	\$ 1,689,545

Balance Sheet

(Book Value)

December 31, 2006

<i>Assets</i>		<i>Liabilities</i>	
<i>Current</i>		<i>Current</i>	
Cash on hand	\$ 90	Operating Loan	\$ 0
Corn	\$ 7,950	Feeder Cattle	\$ 284,430
Soybeans	\$ 13,760	Next Machinery Principle Payment	\$ 0
Silage	\$ 0	Next Combine Principle Payment	\$ 0
Cattle	\$ 284,430	Next Swine Facility Principle Payment	\$ 32,400
Market Hogs	\$ 122,429	Next Land Principle Payment	\$ 15,780
Total Current	\$ 428,659	Total Current	\$ 332,610
<i>Intermediate</i>		<i>Intermediate</i>	
Sows, Boars & Gilts	\$ 27,202	Machinery	\$ 0
Machinery	\$ 96,855	Combine	\$ 0
Combine	\$ 0	Total Intermediate	\$ 0
Total Intermediate	\$ 124,057	<i>Long Term</i>	
<i>Long Term</i>		Swine Facilities	\$ 162,000
New Swine Facilities	\$ 297,750	Land	\$ 361,206
Land	\$ 840,000	Total Long Term	\$ 523,206
Improvements	\$ 30,000	Total Liabilities	\$ 855,816
Total Long Term	\$ 1,167,750	Net Worth	\$ 864,650
Total Assets	\$ 1,720,466	Total Liabilities & Net Worth	\$ 1,720,466

Cash Flow Summary

2006

Cash Inflows

Operating Income		Borrowing	
Corn Sales	\$ 174,283	Emergency Loan	\$ 35,547
Soybean Sales	\$ 175,440	Operating Loan	\$ 150,000
Crop Insurance Payments	\$ 0	Feeder Cattle Loan	\$ 284,430
Cattle Sales	\$ 336,105	Machinery Loan	\$ 0
Hog Sales	\$ 328,806	Combine Loan	\$ 0
Sow & Boar Sales	\$13,240	Hog Facilities Loan	\$ 0
Total Cash Income	\$ 1,027,874	Land Loan	\$ 0
		Carryover Operating Loan	\$ 0
Capital Assets Sold		Total Borrowing	\$ 469,977
Mach. & Combine Sale	\$ 0	Total Cash Inflow	\$ 1,497,851

Cash Outflows

Operating Expenses		Capital Assets Purchased	
Seed, Fertilizer, Chem.	\$ 82,645	Machinery Purchase	\$ 0
Crop Insurance	\$ 0	Combine Purchase	\$ 0
Fuel & Oil	\$ 33,225	Hog Facilities Purchase	\$ 0
Custom Mach. Hire	\$ 29,000	Land Purchase	\$ 0
Machinery Repairs	\$ 53,639		
Cash Rent	\$ 78,000	Principle Paid	
Feeder Cattle Purchased	\$ 284,430	Operating	\$ 150,000
Grain Purchased	\$ 135,906	Cattle	\$ 242,392
Hay & Supplement	\$ 108,965	Machinery	\$ 0
Veterinary & Health	\$ 18,192	Combine	\$ 0
Hauling & Commission	\$ 15,384	Swine Facilities	\$ 32,400
Boars & Gilts Purchased	\$ 4,800	Emergency Loan	\$ 35,547
Property Taxes	\$ 11,756	Land	\$ 17,513
Insurance: Build. & Mach.	\$ 2,279	Total Principle Paid	\$ 477,852
Building Repair	\$ 5,224		
Utilities	\$ 11,193	Non-Farm Exp.	
Hired Labor	\$ 29,480	Family Living Exp.	\$ 35,000
Grain Storage	\$ 0	Income Taxes Paid	\$ 13,676
Interest Paid	\$ 67,340		
Total Cash Expenses	\$ 971,458	Total Cash Outflow	\$ 1,497,986

Profit and Loss Statement

2006

<u>Income</u>	Total	Crops	Hogs	Cattle
Sales	\$ 1,027,874	\$ 349,723	\$ 342,046	\$ 336,105
Insurance Payments	\$ 0	\$ 0		
Inventory Change	\$ 62,317	\$ 1,974	\$ 18,305	\$ 42,038
Gross Income	\$ 1,090,191	\$ 351,697	\$ 360,351	\$ 378,143
Feed & Grain Purchases	(\$ 244,871)	\$ 0	(\$ 171,913)	(\$ 72,958)
Raised Crops Fed	\$ 0	\$ 29,700	(\$ 16,843)	(\$ 12,857)
Livestock Purchases	(\$ 289,230)		(\$ 4,800)	(\$ 284,430)
Value of Farm Production	\$ 556,090	\$ 381,397	\$ 166,795	\$ 7,898
<u>Expenses</u>				
Seed, Fertilizer & Pesticides	\$ 82,645	\$ 82,645		
Fuel, Repairs, Custom Hire	\$ 115,864	\$ 115,864		
Grain Storage	\$ 0	\$ 0		
Cash Rent	\$ 78,000	\$ 78,000		
Livestock Expenses	\$ 33,576		\$ 24,000	\$ 9,576
Property Tax & Insurance	\$ 14,036	\$ 9,056	\$ 4,736	\$ 244
Utilities & Building Repairs	\$ 16,417	\$ 1,744	\$ 11,636	\$ 3,037
Interest	\$ 67,340	\$ 44,026	\$ 15,876	\$ 7,438
Hired Labor	\$ 29,481	\$ 9,449	\$ 15,462	\$ 4,570
Depreciation	\$ 31,262	\$ 12,012	\$ 18,000	\$ 1,250
Total Expenses	\$ 468,619	\$ 352,795	\$ 89,710	\$ 26,114
Net Farm Income	\$ 87,471	\$ 28,602	\$ 77,085	(\$ 18,216)

Final Exam Key

1. b
2. d
3. f
4. c
5. b
6. a
7. d
- 8.

Year	Net Cash Flow	Present Value Factor	Present Value
1	\$3,740	0.921659	\$ 3,447.00
2	\$4,360	0.849455	\$ 3,703.62
3	\$5,970	0.782908	\$ 4,673.46
4	\$4,620	0.721574	\$ 3,333.67
5	\$7,490	0.665045	\$ 4,981.19
6	\$8,180	0.612945	\$ 5,103.89
	\$34,360	Total	\$ 25,153.33
Less Initial Investment			\$ 25,000.00
Net Present Value			\$ 153.33
Internal Rate of Return (IRR)			8.6793

9. c
10. d

11. d $\left(\frac{8}{8 + 7 + 6 + 5 + 4 + 3 + 2 + 1}\right) \times (\$25,000 - \$9,500) = \$ 3,440$

12. b
13. a
14. a
15. b
16. a
17. b
18. c

19. A written land lease should include:

- a. Legal description of the land
- b. Term of the lease (length)
- c. Amount of rent due, as well as timing and method of payments
- d. Name of land owner and tenant
- e. Signatures of all parties
- f. Other possible terms:
 - i. Arbitration
 - ii. Renewal and cancellation policy

20. d $(15.0 + 6.8 + 2.9 + 12.4) = 37.1\%$

21.

Total Cash Income			\$ 1,027,874
Accrual Adjustments			
Inventories	Ending Values	Beginning Values	
Crops: Corn, Soybean & Silage	\$ 21,710	\$ 19,736	
Cattle	\$ 284,430	\$ 242,392	
Market Hogs	\$ 122,429	\$ 105,948	
Sows, Boars & Gilts	\$ 27,202	\$ 25,378	Net Change in Inventories
Sub-Total	+ \$ 455,711	- \$ 393,454	\$ 62,317
Total Cash Expenses			- \$ 971,458
Machinery Depreciation		\$ 12,012	
Hog Facilities and Equipment Depreciation		\$ 18,000	
Cattle Feeding Equipment Depreciation		\$ 1,250	
Total Depreciation			\$ 31,262
2006 Net Farm Income (before tax)			\$ 87,471

22. a $\$855,816 / \$1,720,466 = 0.497$

23. d $\$428,659 / \$332,611 = 1.29$

Extra Credit: d $\text{Return on Assets (\%)} = \frac{\text{Return to Assets}}{\text{Average Assets}}$

$$\begin{aligned} \text{Return to Assets} = & \quad \text{Net Farm Income} \\ & + \text{Interest Expense} \\ & - \text{Opportunity Cost of Unpaid Labor} \\ & - \text{Opportunity Cost of Management} \end{aligned}$$

$$\text{Average Assets} = \frac{(\text{Beginning Assets} + \text{Ending Assets})}{2}$$

$$\text{Return to Assets} = \$87,471 + \$67,340 - \$26,400 - \$28,000 = \$100,411$$

$$\text{Average Assets} = (\$1,689,545 + \$1,720,466) / 2 = \$1,705,005$$

$$\text{ROA} = \$100,411 / \$1,705,005 = 5.9 \%$$

Extra Credit: The value of the resource (input) in its next best use; or, the value given up by using a resource (input) in activity “A” rather than activity “B”.

Example: The value of the farm raised corn used within the livestock feeding enterprise. This corn could be sold rather than fed to livestock. Therefore, the livestock enterprise should “buy” the corn from the corn enterprise, and an opportunity cost is placed on the corn that is used as feed.