

ANSWER SHEET:

**2 points each
100 points total**

1. **C**

2. **A**

3. **B**

4. **D**

5. **A**

6. **B**

7. **D**

8. **C**

9. **D**

10. **A**

11. **B**

12. **B**

13. **B**

14. **C**

15. **C**

16. **D**

17. **B**

18. **D**

19. **C**

20. **A**

21. **D**

22. **A**

23. **D**

24. **C**

25. **D**

26. **D**

27. **A**

28. **C**

29. **A**

30. **B**

31. **I**

32. **E**

33. **H**

34. **A**

35. **C**

36. **G**

37. **F**

38. **D**

39. **B**

40. **J**

41. **D**

42. **E**

43. **G**

44. **J**

45. **C**

46. **H**

47. **F**

48. **I**

49. **A**

50. **B**

Contestant Number: _____
 Chapter: _____

Score: 200 total
points possible

**Utah Farm Business Management CDE
 Problem Section
 2011**

Use the *Resource Information for Petersen Farms* provided and the additional information given in this section to answer the questions. Please read all questions carefully.

Part I. Financial Statements Analysis (98 Points)

1. Balance Sheet: Using the following information, enter the items and their values into the form to create a balance sheet for Petersen Farms for 31 December 2010. **(40 points)**

<u>Balance Sheet Information</u>	<u>31 Dec 2010</u>
Cash and Checking Account Balances	\$5,753
Accrued Interest on Loans	\$132
Equipment and Machinery	\$138,500
Accounts Payable	\$1,520
Machinery Loan (total amount)	\$27,590
Machinery Loan portion due within 12 months	\$6,830
Feeder Lambs (to be sold this year)	\$4,082
Buildings	\$36,750
Accounts Receivable	\$4,625
Land	\$1,083,000
Prepaid Expenses	\$3,675
Crops and Feed on hand	\$8,750
Land Mortgage (total amount)	\$570,923
Mortgage portion due within 12 months	\$19,777

	<u>ASSETS</u>		<u>LIABILITIES</u>		
	Current Assets	2010	Current Liabilities	2010	
2 pts each	Cash and Checking	\$5,753	Accrued Interest on Loans	\$132	2 pts each
	Feeder Lambs	\$4,082	Accounts Payable	\$1,520	
	Accounts Receivable	\$4,625	Machinery Loan (12 mo.)	\$6,830	
	Prepaid Expenses	\$3,675	Land Mortgage (12 mo.)	\$19,777	
	Crop and Feed on hand	\$8,750			
1 pt	Total Current Assets	\$26,885	Total Current Liabilities	\$28,259	1 pt
	Non-Current Assets		Non-Current Liabilities		
2 pts each	Equipment and Machinery	\$138,500	Machinery Loan	\$20,760	2 pts each
	Buildings	\$36,750	Land Mortgage	\$551,146	
	Land	\$1,083,000			
1 pt	Total Non-Current Assets	\$1,258,250	Total Non-Current Liabilities	\$571,906	1 pt
2 pts	Total Farm Assets	\$1,285,135	Total Farm Liabilities	\$600,165	2 pts each
			Net Worth (Equity)	\$684,970	
			Total Liabilities + Net Worth	\$1,285,135	

2. **Income Statement:** Using the following information, enter the items and their values into the form to create an income statement for Petersen Farms for 2010. (32 points)

<u>Income Statement Information</u>	<u>2010</u>
Lambs Sold	\$7,711
Seed	\$7,891
Fertilizer	\$34,306
Change in Accrued Interest Payable	-\$16
Crop Sales	\$330,991
Pesticides/Herbicides	\$14,500
Change in Livestock Inventory	-\$2,011
Government Payments	\$200
Insurance	\$16,482
Feed purchased	\$2,222
Veterinary	\$64
Depreciation	\$31,442
Change in Accounts Payable	\$1,264
Supplies	\$299
Change in Crop Inventory	\$7,465
Fuel, Oil, Lubricants	\$30,866
Repairs and Maintenance	\$36,058
Change in Accounts Receivable	-\$2,686
Hired Labor	\$15,051
Miscellaneous Costs	\$12,832
Utilities	\$909
Interest Paid	\$29,874
Dues and Fees	\$418
Taxes	\$9,284
Other Farm Income	\$1,450
Custom Hire	\$24,614

32 points total		INCOME STATEMENT	
		INCOME	2010
1 point each		<i>Cash Sales</i>	
		Lambs Sold	\$7,711
		Crop Sales	\$330,991
		Government Payments	\$200
		Other Farm Income	\$1,450
		<i>Accrual Adjustments</i>	
		Change in Livestock Inventory	-\$2,011
		Change in Crop Inventory	\$7,465
		Change in Accounts Receivable	-\$2,686
1 pt each		Total Income (cash basis)	\$340,352
		Total Income (accrual basis)	\$343,120
		EXPENSES	
		<i>Cash Expenses</i>	
1 point each		Seed	\$7,891
		Fertilizer	\$34,306
		Pesticides/Herbicides	\$14,500
		Insurance	\$16,482
		Feed Purchased	\$2,222
		Veterinary	\$64
		Supplies	\$299
		Fuel, Oil, Lubricants	\$30,866
		Repairs and Maintenance	\$36,058
		Hired Labor	\$15,051
		Miscellaneous Costs	\$12,832
		Utilities	\$909
		Interest Paid	\$29,874
		Dues and Fees	\$418
		Taxes	\$9,284
		Custom Hire	\$24,614
<i>Accrual Adjustments</i>			
Change in Accrued Interest Payable	-\$16		
Depreciation	\$31,442		
Change in Accounts Payable	\$1,264		
1 point each		Total Expenses (cash basis)	\$235,670
		Total Expenses (accrual basis)	\$268,360
		Net Farm Income (cash basis)	\$104,682
		Net Farm Income (accrual basis)	\$74,760

3. Financial Statements Analysis: Use the *Resource Information for Petersen Farms* and the financial statements you created for Petersen Farms in questions 1 and 2 to answer the following questions: **(26 points)**

- a. What was the change in net worth from 2009 to 2010? **(2 points)** -\$1,262
- b. What was the change in net farm income (accrual basis) from 2009 to 2010? **(2 points)** -\$3,562
- c. Fill in the formulas for calculating the ratios given in the table and calculate the figures for Petersen Farms for 31 December 2010. **(12 points)**

	2 points each	1 point each
	Formula	31 December 2010
Current Ratio	Total Current Farm Assets/ Total Current Farm Liabilities	0.95
Leverage Ratio	Total Farm Liabilities/ Total Farm Equity	0.88
Debt to Asset Ratio	Total Farm Liabilities/ Total Farm Assets	0.47
Working Capital	Total Current Farm Assets— Total Current Farm Liabilities	-\$1,374

- d. What assessment can you make about Petersen Farms' Liquidity? **(5 points)**

**A Current Ratio < 1 means there are more current liabilities than current assets.
Also working capital is negative.
Both signify poor liquidity.**

However, respective to 2009, both the current ratio and working capital have increased, so farm liquidity is improving.

- e. What assessment can you make about Petersen Farms' Solvency? **(5 points)**

**The Debt to Asset Ratio is < 0.5 and the Leverage Ratio is < 1.
Both indicate good solvency.**

Also, both ratios have improved relative to 2009 so farm solvency is also improving.

Part II. Budgeting (72 Points)

1. Given the enterprise budgets provided, what are the net returns above operating costs and above total costs for Petersen Farms for their feeder lamb enterprise and crop enterprises? (12 points) (2 points each)

	<u>Net Returns Above Operating Costs</u>	<u>Net Returns Above Total Costs</u>
a. Lambs:	\$ <u>9.00</u> per lamb	\$ <u>0.17</u> per lamb
b. Barley:	\$ <u>159.42</u> per acre	\$ <u>85.74</u> per acre
c. Alfalfa:	\$ <u>228.49</u> per acre	\$ <u>129.22</u> per acre

2. The enterprise budgets are given on a per-lamb or per-acre basis. Based on the feeder lamb numbers and acres in barley and alfalfa production given in the *Resource Information for Petersen Farms*, calculate total returns for each enterprise of Petersen Farms. (12 points) (2 points each)

	<u>Net Returns Above Operating Costs</u>	<u>Net Returns Above Total Costs</u>
a. Lambs:	\$ <u>567.00</u> total	\$ <u>10.71</u> total
b. Barley:	\$ <u>67,275.24</u> total	\$ <u>36,182.28</u> total
c. Alfalfa:	\$ <u>68,547.00</u> total	\$ <u>38,766.00</u> total

3. Prices are always changing in agricultural markets. If sales prices changed from those given in the enterprise budgets to the following and everything else remained constant, what would the new net returns be for the various enterprises of Petersen Farms? (36 points) (3 points each)

Lambs: \$118.00/cwt
 Barley: \$3.74/bushel
 Alfalfa: \$92.00/ton

	<u>Net Returns Above Operating Costs</u>	<u>Net Returns Above Total Costs</u>
a. Lambs:	\$ <u>16.20</u> per lamb	\$ <u>7.37</u> per lamb
b. Lambs:	\$ <u>1,020.60</u> total	\$ <u>464.31</u> total
c. Barley:	\$ <u>126.17</u> per acre	\$ <u>52.49</u> per acre
d. Barley:	\$ <u>53,243.74</u> total	\$ <u>22,150.78</u> total
e. Alfalfa:	\$ <u>258.49</u> per acre	\$ <u>159.22</u> per acre
f. Alfalfa:	\$ <u>77,547.00</u> total	\$ <u>47,766.00</u> total

4. Answer the following questions about Petersen Farms:

- Which Petersen Farms enterprise is the most profitable? (4 points) Alfalfa
- Which Petersen Farms enterprise is the least profitable? (4 points) Lambs
- Given the price changes in question 2, which crop enterprise had the greatest percent change in net returns above total costs per acre? (4 points) Barley

Part III. Farm Management (30 Points)

1. Using the *Resource Information for Petersen Farms* and your answers in Parts I and II, perform a SWOT analysis for Petersen Farms.

Answers Vary. Below are some examples of possible answers. (3 points each)

<p>Strengths:</p> <ol style="list-style-type: none">1. Good financial records.2. Liquidity and solvency are improving.3. Owners have college degrees.	<p>Weaknesses:</p> <ol style="list-style-type: none">1. Negative working capital and low current ratio (poor liquidity).2. Net income decreased from 2009 to 2010.3. Sole proprietorship organization-high risk/unlimited personal liability.
<p>Opportunities:</p> <ol style="list-style-type: none">1. Favorable use of futures market to capture greater profits.2. Greater profits in other enterprises.	<p>Threats:</p> <ol style="list-style-type: none">1. Declining market prices.2. Financial crisis.

**Utah Farm Business Management CDE
Team Section
2011**

1. The Petersens are considering shifting 200 of the acres they currently have in hay production to wheat production. Using the enterprise budgets provided in the *Resource Information for Petersen Farms*, create a partial budget for the Petersens. (50 points)

PARTIAL BUDGET TO CHANGE FROM ALFALFA HAY TO WHEAT									
10 points	Additional Returns				Reduced Returns				10 points
		Quantity	Price	Value		Quantity	Price	Value	
	Wheat	18,460	\$4.28	\$79,008.80	Alfalfa	1,200	\$87.00	\$104,400	
	Straw	140	\$48.00						
	Total AR:		\$85,728.80	Total RR:			\$104,400		
10 points	Reduced Costs				Additional Costs				10 points
		Quantity	Price	Value		Quantity	Price	Value	
	Fertilizer	200	\$24.96	\$4,992	Seed	200	\$17.00	\$3,400	
	Pesticides/Herbicides	200	\$43.50	\$8,700	Fertilizer	200	\$71.37	\$14,274	
	Fuel and Oil	200	\$56.96	\$11,392	Pesticides/Herbicides	200	\$42.57	\$8,514	
	Custom Hire	200	\$15.64	\$3,128	Fuel and Oil	200	\$28.97	\$5,794	
	Hired Labor	200	\$23.33	\$4,666	Custom Hire	200	\$26.82	\$5,364	
	Utilities	200	\$1.26	\$252	Hired Labor	200	\$24.46	\$4,892	
	Crop Insurance	200	\$24.22	\$4,844	Utilities	200	\$1.26	\$252	
	Repairs and Maintenance	200	\$68.72	\$13,744	Crop Insurance	200	\$25.82	\$5,164	
	Dues	200	\$0.58	\$116	Repairs and Maintenance	200	\$46.35	\$9,270	
	Miscellaneous	200	\$12.86	\$2,572	Dues	200	\$0.58	\$116	
	Operating Interest	200	\$3.46	\$692	Miscellaneous	200	\$18.57	\$3,714	
	Farm Insurance	200	\$4.14	\$828	Operating Interest	200	\$4.82	\$964	
	Depreciation	200	\$36.45	\$7,290	Farm Insurance	200	\$5.25	\$1,050	
	Taxes	200	\$12.86	\$2,572	Depreciation	200	\$16.95	\$3,390	
Interest	200	\$45.82	\$9,164	Taxes	200	\$12.48	\$2,496		
				Interest	200	\$28.47	\$5,694		
	Total RC:		\$74,952	Total AC:			\$74,348		
	Total AR + RC	\$160,680.80		Total RR + AC	\$178,748				
Net Change:				-\$18,067.20					

10 points

2. Would you recommend the Petersens shift 200 of their acres of alfalfa to wheat production? *Why or why not?* (25 points)

Answers Vary.

No. Changing from Alfalfa to Wheat would reduce total farm returns by an estimated -\$18,067.20. Additionally, changing to wheat would decrease benefits gained by specialization in Alfalfa.

However, changing 200 acres to wheat would further diversify Petersen Farms and could reduce the risk of the farm. If the reduced risk is worth more to the Petersens than the reduced returns, they may want to change the 200 acres to wheat.

3. List one *specific* way the Petersens can manage each of the following types of risk and one advantage and disadvantage for each. (75 points) **Answers Vary. The following are some examples of possible answers.**

5 points each

5 points each

5 points each

a. Production Risk:

Advantage

Disadvantage

1. Diversification

If one enterprise suffers, others may still be profitable

Lower overall returns

Crop Insurance

Protects against total loss

Premium cost

b. Price/Marketing Risk:

1. Futures Contracts

Reduces risk of losses

Reduces ability to capture gains

Puts and Calls

Reduces risk of loss without losing ability to capture gains.

Premium cost

c. Financial Risk:

1. Fixed Interest Rates

Won't change or increase

May be higher

Self-Liquidating Loans

Can be repaid with productivity of what was purchased (crops, dairy milk, etc.)

If production falls, loans may be difficult to repay.

d. Human Risk:

1. Good employee training

Help avoid human error accidents

Requires time and energy

Life Insurance

Protects company in case of death of an owner

Premium cost

e. Legal/Institutional Risk:

1. LLC

Limited personal liability

More difficult to start than a sole proprietorship

Contracts

Protection in event of breach

More difficult to set up than a "hand shake"