

1) (10 pts. total) Below is a simplified farm Balance Sheet.

a) (2 pts.) Use the information given and your knowledge of the relationships among Balance Sheet entries to fill in the **four** missing cells and then answer the questions below.

BALANCE SHEET	12/31/2013	12/31/2012		12/31/2013	12/31/2012
Current Assets	800,000	675,000	Current Liabilities	450,000	400,000
Non-Current Assets	950,000	900,000	Non-Current Liabilities	290,000	330,000
			Total Liabilities	740,000	730,000
			Equity	1,010,000	845,000
Total Assets	1,750,000	1,575,000	Total Liabilities & Equity	1,750,000	1,575,000

b) (2 pts.) Based on this Balance Sheet, what is the Current Ratio on 12/31/2013?

$$CR = \text{current assets/current liabilities} = 800,000 / 450,000 = 1.78$$

c) (2 pts.) Based on this Balance Sheet, what is the Debt to Asset Ratio on 12/31/2013?

$$DA = \text{total liabilities/total assets} = 740,000 / 1,750,000 = 0.423$$

d) (4 pts.) Briefly define each category below and provide one farm example for each category.

Current Asset: *asset with useful life < 1 year* *grain, feed, feeder livestock*

Non-Current Asset: *asset with useful life > 1 year* *tractor, building, land*

Current Liability: *liabilities due within 1 year* *annual interest + principal payments due*

Non-Current Liability: *liabilities due more than 1 year away: principal owed on long term loans*

2) (8 pts. total) Below is a simplified farm Income Statement.

a) (2 pts.) Use the given information to fill in the **three** missing cells.

INCOME STATEMENT		12/31/2012 to 12/31/2013	
Crop Sales			375,000
Livestock/Dairy Sales			750,000
	Total Revenue		1,125,000
Operating Costs			840,000
Interest Expenses			35,000
	Total Costs		875,000
	Net Farm Income from Operations		250,000
	Unpaid Labor and Management		85,000
	Net Farm Income		165,000

Use the Income Statement above and the Balance Sheet in Question 1 to answer the questions below. Show how you calculate your answers for potential partial credit.

b) (2 pts.) What is this farm's Return on Assets? What is this farm's Rate of Return on Assets?

$$ROA = \text{Net Income} + \text{Interest} - \text{Unpaid Labor Management} = 250,000 + 35,000 - 85,000 = 200,000$$

$$\text{RoROA} = ROA / \text{average assets} = 200,000 / \text{average}(1,750,000, 1,575,000) = 12\%$$

c) (2 pts.) What is this farm's Return on Equity? What is this farm's Rate of Return on Equity?

$$ROE = ROA - \text{Interest} = 200,000 - 365,000 = 165,000$$

$$\text{RoROE} = ROE / \text{average equity} = 165,000 / \text{average}(1,010,000, 845,000) = 17.8\%$$

d) (2 pts.) What is this farm's Operating Profit Margin Ratio (i.e. Profit Margin)?

$$\text{Profit margin} = ROA / \text{Total revenue} = 200,000 / 1,125,000 = 17.8\%$$

3) (6 pts. total) Briefly and concisely answer each question below.

a) You sell some feeder cattle for \$100,000 and use the money to buy \$100,000 of machinery without borrowing any money. Explain how this transaction affects the following measures:

a) (2 pts.) Your current assets and non-current assets.

CA would decrease and non-CA would increase

b) (2 pts.) Your current ratio.

CR = CA/Current Liabilities must decrease

b) (2 pts.) Your debt to asset ratio and your equity

No change in D to A and equity, since debts and equity do not change.

4) (18 pts. total) Briefly and concisely answer each question below.

a) (2 pts.) Do most farms use cash or accrual accounting for filing taxes?

Cash accounting

b) (2 pts.) Suppose you planted and harvested corn in 2013, but sold it in 2014. If you claim the income on your 2013 taxes, is this cash accounting or accrual accounting?

Accrual accounting

c) (2 pts.) Suppose you bought seed in November 2013 to plant in May 2014. If you deduct the cost on your 2013 taxes, is this cash accounting or accrual accounting?

Cash accounting

d) (3 pts.) Suppose you owned a large farm in another state and hired a farm manager. Would you use cash or accrual accounting to evaluate his managerial performance over the last five years? Briefly explain why.

I'd recommend accrual accounting to see what he/she made each season/crop year, in case he/she moved inputs or output revenue across calendar years.

e) (3 pts.) If you were showing your value as a farm manager to your silent partners over the last four years, would you use a market basis or a cost basis? Briefly explain why.

Cost basis, so that the only changes in equity would be due to retained earnings generated by you as a manager.

f) (3 pts.) If you were a banker analyzing a farmer's loan application to buy more land, would you use a market basis or a cost basis to value the land used as collateral? Briefly explain why.

Market basis so you could see how much money you could generate if you had to foreclose on the loan and liquidate the farm to cover the debt.

g) (3 pts.) If you invested \$500,000 in a farm and you were calculating in your return on investment over the last three years, would you use a market basis or a cost basis? Briefly explain why.

Market basis to see how much money the farm is worth since you paid \$500,000

5) (4 pts. total) You buy a tractor for \$120,000 with a useful life of 4 years.

a) (2 pts.) Fill in the table below using Straight Line Depreciation for this tractor assuming a \$60,000 salvage value. Show your work.

Year	Depreciation During Year	Value at Year End
1	$60,000 \times 25\% = 15,000$	$120,000 - 15,000 = 105,000$
2	$60,000 \times 25\% = 15,000$	$105,000 - 15,000 = 90,000$
3	$60,000 \times 25\% = 15,000$	$90,000 - 15,000 = 75,000$
4	$60,000 \times 25\% = 15,000$	$75,000 - 15,000 = 60,000$

$$R_{SL} = 1/\text{useful life} = 1/4 = 25\%$$

$$(120,000 - 60,000) \times 25\% = 15,000/\text{year}$$

b) (2 pts.) Fill in the table below using Double (200%) Declining Balance Depreciation for this tractor for years 1 and 2 only. IGNORE SALVAGE VALUE. Show your work.

Year	Depreciation During Year	Value at Year End
1	$120,000 \times 50\% = 60,000$	$120,000 - 60,000 = 60,000$
2	$60,000 \times 50\% = 30,000$	$60,000 - 30,000 = 30,000$
3	xxxx	xxxx
4	xxxx	xxxx

$$R_{DDB} = 2 \times R_{SL} = 50\%$$

6) (12 pts.) Suppose that in 2012 you paid \$130,000 for a combine and have been depreciating it for tax purposes using the tax table below.

a) (2 pts.) Enter the depreciation claimed in 2012 and 2013 in the table below.

Year	Calendar Year	Depreciation Rate	Depreciation Claimed
1	2012	14.29%	$130,000 \times 14.29\% = 18,577$
2	2013	24.49%	$130,000 \times 24.49\% = 31,837$
3	2014	17.49%	
4	2015	12.49%	
5	2016	8.93%	
6	2017	8.92%	
7	2018	8.93%	
8	2019	4.46%	

b) (2 pts.) What is your income tax basis in the combine at the beginning of 2014?

$$\text{Basis} = \text{purchase price} - \text{depreciation claimed} = 130,000 - 18,577 - 31,837 = 79,586$$

c) (2 pts.) If you sold the combine during 2014 for \$70,000, how much gain or loss would you report on your income tax return?

$$\text{Gain} = \text{sale price} - \text{basis} = 70,000 - 79,586 = -9,586 = \text{a loss of } 9,586$$

Rather than using the table in part a, suppose instead you chose the Section 179 election and deducted the full cost of the combine for your 2011 taxes.

d) (2 pts.) What is your income tax basis in the combine at the beginning of 2014?

\$0, fully depreciated

e) (2 pts.) If you sold the combine during 2014 for \$70,000, how much gain or loss would you report on your income tax return?

$$\text{Gain} = \text{sale price} - \text{basis} = 70,000 - 0 = 70,000$$

f) (2 pts.) Consider ordinary income tax, capital gain tax, and self-employment tax. Of these three taxes, which one or ones is this gain or loss subject to?

Ordinary income tax only

7a) (3 pts.) Briefly explain an initial tax benefit of choosing the Section 179 election rather than using the standard IRS table for depreciating purchased assets.

Can deduct full cost from your taxable income, thus reducing your ordinary income tax paid and your self-employment tax paid. May even be able to get your taxable income into the lower income tax bracket.

7b) (3 pts.) Briefly explain a long-term tax benefit of choosing the Section 179 election for depreciating purchased assets that occurs when the asset is sold.

Longer term when sell asset and have to claim gain as taxable income, only have to pay ordinary income tax on it, not the self-employment income tax.

8) (22 pts. total) Provide short answers to each of the following questions. Mom and Dad own a farm, with all assets owned as marital property under Wisconsin's marital property law. Among their assets is land currently worth \$800,000 with a \$200,000 income tax basis. Use this information to answer each question below. **Briefly explain each answer.**

a) (2 pts.) If Mom and Dad sold the land to Son for \$800,000, how much gain or loss would Mom and Dad have to report as a result of the sale?

Gain = sale price – basis = 800,000 – 200,000 = 600,000

b) (2 pts.) Consider ordinary income tax, capital gain tax, and self-employment tax. Of these three taxes, which one or ones is this gain or loss subject to?

Only capital gain tax

c) (2 pts.) Suppose Mom and Dad gave the land to Son. If gift taxes are due, who would pay them, Mom & Dad or Son? Based on current tax laws, would gift taxes be due?

Mom and Dad would pay gift taxes if due, but given the annual exclusions of \$14,000 per person and the lifetime exclusion of \$5,000,000, very likely no gift taxes would be due.

d) (2 pts.) If Son sold the land for \$800,000 after Mom and Dad gave it to him, how much gain or loss would Son have to report as a result of the sale?

Basis transfers with gift, so Gain = sale price – basis = 800,000 – 200,000 = 600,000

e) (2 pts.) Mom dies, giving her interest in the land to Dad in her will, and then Dad gives the land to Son. How much gain or loss would Son have to report if he sold it for \$800,000?

When mom dies, basis updates to date of death fair market value of 800,000, then this basis transfers with the gift, so Gain = sale price – basis = 800,000 – 800,000 = 0.

f) (2 pts.) Actually, Mom did not die, rather Mom and Dad contributed the land to a C-Corporation in exchange for ownership shares in the C-Corporation and the C-Corporation sold the land for \$800,000, how much gain or loss would the C-Corporation realize?

Basis transfers to C corporation, so Gain = sale price – basis = 800,000 – 200,000 = 600,000

i) (2 pts.) Would the C-Corporation pay income tax on the gain or loss?

Yes, C corporations pay taxes

- ii) (2 pts.) Instead of selling the land, the C-Corporation returns the land to Mom & Dad. Does the C-Corporation and/or Mom & Dad have to pay income tax due to this transfer?

Distribution of asset from C corporations triggers recognition of gain. Furthermore, this gain is taxed at both the C corporation level and at the individual level (Mom and Dad).

- g) (2 pts.) If Mom and Dad contributed the land to an LLC in exchange for an ownership interest in the LLC and then the LLC sold the land for \$800,000, how much gain or loss would the LLC realize?

Basis transfers to LLC, so Gain = sale price – basis = 800,000 – 200,000 = 600,000

- i) (2 pts.) Would the LLC pay income tax on this gain or loss?

No, LLCs do not pay taxes, pass through to owners

- ii) (2 pts.) Mom and Dad change their mind and instead of selling the land, the LLC returns the land back to Mom and Dad. Would the LLC and/or Mom & Dad have to pay income tax as a result of this transfer?

Distribution of asset back to Mom and Dad does not trigger recognition of gain.

- 9) (9 pts. total) Provide short answers to each question below.

- a) (3 pts.) Which business entities discussed in class must file or register with the state?

C corporation, S corporation and LLC

- b) (3 pts.) Which business entities discussed in class pay tax on their income?

Sole proprietorships and C corporations

- c) (3 pts.) If you are a member of an LLC and the LLC gets a loan to buy machinery, could the lender seize your personal assets to pay off this debt? Briefly explain why/why not.

Technically owners of LLC are not liable, but most lenders realize this and make owners sign individually as well to personally guarantee the loan, so their personal assets can be used.

- 10) (5 pts.) True or False? Mark your answer based on material discussed in class.

- a) T X F___ Based on “Farming a Flat Function”, a wide range of input levels can be consistent with profit maximization since the profit function is “flat”.
- b) T___ F X According to Dairy Carrie’s blog, farms are getting bigger because profitable farms naturally expand.
- c) T___ F X Based on our discussion of the Tomandl and Vetrano video, starting a dairy grazing operation is much more expensive than a conventional dairy.
- d) T___ F X The video about Milk Source was concerned about animal welfare at the end because of the problems with cow abuse filmed on their farm.
- e) T X F___ According to “Farming a Flat Function” lecture, under use of inputs is often obvious in farming and over use is difficult to see.