1) (11 pts. total) Below is a simplified farm Balance Sheet.

a) (3 pts.) Use the information given and your knowledge of the relationships among Balance Sheet entries to fill in the five missing cells and then answer the questions below.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Assets</td>
<td>400,000</td>
<td>350,000</td>
<td>150,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Non-Current Assets</td>
<td>600,000</td>
<td>500,000</td>
<td>350,000</td>
<td>350,000</td>
</tr>
<tr>
<td>Current Liabilities</td>
<td>150,000</td>
<td>250,000</td>
<td>500,000</td>
<td>600,000</td>
</tr>
<tr>
<td>Non-Current Liabilities</td>
<td>350,000</td>
<td>350,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Liabilities</td>
<td>500,000</td>
<td>600,000</td>
<td>500,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Equity</td>
<td></td>
<td></td>
<td>500,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Total Assets</td>
<td>1,000,000</td>
<td>850,000</td>
<td>1,000,000</td>
<td>850,000</td>
</tr>
</tbody>
</table>

b) (2 pts.) Based on this Balance Sheet, what is the Current Ratio on 12/31/2011?

\[
CR = \frac{\text{current assets}}{\text{current liabilities}} = \frac{400,000}{150,000} = 2.67
\]

c) (2 pts.) Based on this Balance Sheet, what is the Debt to Asset Ratio on 12/31/2011?

\[
DtoA = \frac{\text{total liabilities}}{\text{total assets}} = \frac{500,000}{1,000,000} = 0.50
\]

d) (4 pts.) Provide one farm example for each category below.
- Current Asset: corn in bin, feed, hay, silage, cattle on lot, feeder pigs, etc.
- Non-Current Asset: assets lasting more than a year: building, machinery, breeding livestock
- Current Liability: payments due within a year: mortgage payments, bill at feed store, etc.
- Non-Current Liability: payments due > 1 year in future: principle on loans

2) (11 pts. total) Below is a simplified farm Income Statement.

a) (3 pts.) Use the given information to fill in the three missing cells.

<table>
<thead>
<tr>
<th>INCOME STATEMENT</th>
<th>12/31/2010 to 12/31/2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop Sales</td>
<td>400,000</td>
</tr>
<tr>
<td>Livestock/Dairy Sales</td>
<td>200,000</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>600,000</td>
</tr>
<tr>
<td>Operating Costs</td>
<td>420,000</td>
</tr>
<tr>
<td>Interest Expenses</td>
<td>30,000</td>
</tr>
<tr>
<td>Total Costs</td>
<td>450,000</td>
</tr>
<tr>
<td>Net Farm Income from Operations</td>
<td>150,000</td>
</tr>
<tr>
<td>Unpaid Labor and Management</td>
<td>50,000</td>
</tr>
<tr>
<td>Net Farm Income</td>
<td>100,000</td>
</tr>
</tbody>
</table>
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) (3 pts.) What is this farm’s Return on Assets? What is this farm’s Rate of Return on Assets?
\[ ROA = \frac{Net\ Income\ From\ Operations + Interest - Unpaid\ Labor\ &\ Mgmt}{Average\ Assets} = \frac{150,000 + 30,000 - 50,000}{\frac{1,000,000 + 850,000}{2}} = 130,000 \]
\[ ROROA = \frac{ROA}{Average\ Assets} = \frac{130,000}{\frac{1,000,000 + 850,000}{2}} = 14.05\% \]

c) (3 pts.) What is this farm’s Return on Equity? What is this farm’s Rate of Return on Equity?
\[ ROE = ROA - Interest = 130,000 - 30,000 = 100,000 \]
\[ ROROE = \frac{ROE}{Average\ Equity} = \frac{100,000}{\frac{500,000 + 250,000}{2}} = 26.67\% \]

d) (2 pts.) What is this farm’s Operating Profit Margin Ratio (i.e. Profit Margin)?
\[ Profit\ Margin = \frac{ROA}{Revenue} = \frac{130,000}{600,000} = 21.7\% \]

3) (6 pts. total) Briefly and concisely answer each question below.
a) You buy a tractor for your farm for $50,000, paying the full cost for it using only cash you have in your bank account. Explain how this purchase would affect the following measures:

a) (2 pts.) Your current assets and non-current assets.
Current Assets decrease by $50,000 and Non-current Assets increase by $50,000.

b) (2 pts.) Your current ratio.
\[ CR = \frac{Current\ Assets}{Current\ Liabilities} \]
If current assets decrease, CR must decrease too.

b) (2 pts.) Your debt to asset ratio.
Remains unchanged because total assets do not change and debt does not change.

4) (11 pts. total) Briefly and concisely answer each question below.
a) (3 pts.) How do cash accounting and accrual accounting treat costs for purchasing inputs and revenues from selling outputs differently?
Cash accounting puts costs in the year they are purchased and income from selling crops in the year they are sold, regardless of the crop year they are actually used or harvested. Accrual accounting puts costs in the crop year the inputs are used and outputs are sold. Thus fertilizer bought in December 2010 but used for the 2011 crop is treated as a cost in 2010 for cash accounting, but for 2011 for accrual accounting. Similarly, grain harvested in 2010 but sold in 2011 is credited as income in 2011 for cash accounting, but 2010 for accrual accounting.

b) (2 pts.) Do most farms use cash or accrual accounting for filing taxes?
About 95% of farms use cash accounting for tax purposes.

c) (2 pts.) Does cash or accrual accounting provide a more accurate estimate of farm profitability in any given year?
Accrual accounting by putting costs and incomes in the correct crop year is a more accurate measure of farm profitability.

d) (2 pts.) If you were using a farm as collateral for a loan (say to buy more land), would the bank likely use a market basis or a cost basis for valuing the farm assets?
Likely a market basis, as they would be interested in the income they could generate if they had to foreclose the loan and sell your assets: would it be enough to cover their costs?

f) (2 pts.) Would an off-farm investor determining how much the value of his/her farm investment changed over the last three years use a market basis and a cost basis?

Likely a market basis, to see how much the farm assets (likely land) had increased in value over the three years, unless the investor was interested also in the income generated from the assets as an operation, then this income would be estimated using a cost basis for the assets.

5) (6 pts. total) You buy a bull for $7,000 with a useful life of 5 years.

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Depreciation During Year</th>
<th>Value at Year End</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,000</td>
<td>6,000</td>
</tr>
<tr>
<td>2</td>
<td>1,000</td>
<td>5,000</td>
</tr>
<tr>
<td>3</td>
<td>1,000</td>
<td>4,000</td>
</tr>
<tr>
<td>4</td>
<td>1,000</td>
<td>3,000</td>
</tr>
<tr>
<td>5</td>
<td>1,000</td>
<td>2,000</td>
</tr>
</tbody>
</table>

Annual Depreciation = (Purchase Price – Salvage Value)/Useful Life
= (7,000 – 2,000) / 5 = 1,000

b) (4 pts.) Fill in the table below using Double (200%) Declining Balance Depreciation for this bull assuming no salvage value. Show your work.

<table>
<thead>
<tr>
<th>Year</th>
<th>Depreciation During Year</th>
<th>Value at Year End</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2,800</td>
<td>4,200</td>
</tr>
<tr>
<td>2</td>
<td>1,680</td>
<td>2,520</td>
</tr>
<tr>
<td>3</td>
<td>1,008</td>
<td>1,512</td>
</tr>
<tr>
<td>4</td>
<td>605</td>
<td>907</td>
</tr>
<tr>
<td>5</td>
<td>363</td>
<td>544</td>
</tr>
</tbody>
</table>

Depreciation Rate = 200% of the Straight Line Rate = 2.0 x (1/5) = 40%
Depreciation Year 1 = Basis x 40%
Depreciation Year 1 = 7,000 x 40% = 2,800

Does not reach salvage value of $0, so take remaining $544 in last year, plus the $363.

6) (4 pts. total) Answer the following questions concerning Wallendal’s farm.

a) (2 pts.) List one crop that Wallendal’s farm grows besides corn and soybeans.
Sweet corn, hybrid seed corn, green beans, green peas, potatoes, other processing vegetables

b) (2 pts.) Is the Wallendal’s farm organized as a Sole Proprietor or something else?
Something else. He described it as an operating entity that was a Corporation (Wallendal Supply, Inc.), plus another one that owned the land.
7) **(12 pts.)** Suppose that in 2009 you paid $100,000 for a tractor and have been depreciating it for tax purposes using the tax table below.

a) **(2 pts.)** Enter the depreciation claimed in 2009, 2010, and 2011 in the table below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Calendar Year</th>
<th>Depreciation Rate</th>
<th>Depreciation Claimed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2009</td>
<td>14.29%</td>
<td>100,000 x 14.29% = 14,290</td>
</tr>
<tr>
<td>2</td>
<td>2010</td>
<td>24.49%</td>
<td>100,000 x 24.49% = 24,490</td>
</tr>
<tr>
<td>3</td>
<td>2011</td>
<td>17.49%</td>
<td>100,000 x 17.49% = 17,490</td>
</tr>
<tr>
<td>4</td>
<td>2012</td>
<td>12.49%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2013</td>
<td>8.93%</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2014</td>
<td>8.92%</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>2015</td>
<td>8.93%</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>2016</td>
<td>4.46%</td>
<td></td>
</tr>
</tbody>
</table>

b) **(2 pts.)** What is your income tax basis in the tractor at the beginning of 2012?

\[ \text{Basis} = \text{purchase price} - \text{total depreciation claimed} = 100,000 - (14,290 + 24,490 + 17,490) = 100,000 - 56,270 = 43,730 \]

c) **(2 pts.)** If you sold the tractor at the beginning of 2012 for $60,000, how much gain or loss would you report on your income tax return?

\[ \text{Gain} = \text{Sale Price} - \text{Basis} = 60,000 - 43,730 = 16,270 \]

Rather than using the table in part a, suppose instead you chose the Section 179 election and deducted the full cost of the tractor for your 2009 taxes.

d) **(2 pts.)** What is your income tax basis in the tractor at the beginning of 2012?

\[ \text{Basis} = \text{purchase price} - \text{total depreciation claimed} = 100,000 - 100,00 = 0, \text{you have fully depreciated it.} \]

e) **(2 pts.)** If you sold the tractor at the beginning of 2012 for $60,000, how much gain or loss would you report on your income tax return?

\[ \text{Gain} = \text{Sale Price} - \text{Basis} = 60,000 - 0 = 60,000 \]

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?

*Subject to ordinary income tax, but not capital gain or self-employment taxes. Note: land and breeding livestock get capital gains treatment, so that if this were one of these assets, then capital gains taxes would be due, not ordinary income taxes. See 9 b below.*

8a) **(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.

*You get to deduct the cost from your income and thus lower ordinary income and self-employment taxes due in that year.*

8b) **(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.
When you sell the asset, you only pay ordinary income or capital gains taxes and avoid self-employment taxes on the gain.

9) (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 $600,000 with a $100,000 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 $600,000, how much gain or loss would Mom and Dad have to report as a result of the sale?

Gain = Sale Price – Basis = 600,000 – 100,000 = 500,000

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?

Subject to capital gain tax, but not ordinary income or self-employment taxes. Note: machinery gets ordinary income treatment. See 7 f above.

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?

Gift taxes, if due, would be paid by the donor(s) (here Mom and Dad). Based on current laws, no gift taxes would be due. Mom and Dad each give the annual allowance of $13,000, plus use up $250,000 – $13,000 = $237,000 of their $5 million life time exclusion.

d) (2 pts.) If Son sold the land for $600,000 after Mom and Dad gave it to him, how much gain or loss would Son have to report as a result of the sale?

Gain = Sale Price – Basis = 600,000 – 100,000 = 500,000, because basis transfers with the gift.

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 600,000?

When Mom dies, basis updates to date of death fair market value. When Dad gives the land to Son, basis transfers with gift. Son’s Gain is Sale Price – Basis = $600,000 – $600,000 = $0.

f) (2 pts.) Actually, Mom did not die. Instead, Mom and Dad contribute the land to an LLC in exchange for an ownership interest in the LLC. If the LLC sold the land for $600,000, how much gain or loss would the LLC realize?

Basis transfers when contribute land to LLC, so Gain = Sale Price – Basis = 600,000 – 100,000 = 500,000.

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

No, LLCs are taxed as partnerships, gains are passed to owners of the LLC.

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?

No, transferring assets out of an LLC does not trigger recognition of gain. But if the entity had been a corporation (instead of an LLC), then recognition of gain would be triggered and taxes potentially due.
g)  (2 pts.) If Mom and Dad contributed the land to an S-Corporation in exchange for ownership shares in the S-Corporation and the S-Corporation sold the land for $600,000, how much gain or loss would the S-Corporation realize? 

*Basis transfers when contribute land to Corporation, so Gain = Sale Price – Basis = 600,000 – 100,000 = 500,000.*

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

*No, because S-Corporations do not pay taxes, but pass income on to shareholders.*

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

*Yes, transferring assets out of an S-Corporation triggers recognition of gain (unlike an LLC: see 9 f ii above). However, S-Corporations pass earnings on to their shareholders, so Mom and Dad would pay taxes on the gain.*

10)  (9 pts. total) Provide short answers to each question below.

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

*Sole proprietor, C-corporation*

b)  (3 pts.) Which business entities discussed in class pass their income through to the owners of the entity? 

*Partnership, S-Corporation, LLC*

c)  (3 pts.) If someone buys farm land and puts it into an LLC, would he/she be insulated from all liability for the debts of the LLC? If so, why? If not, why not? 

*Owners of LLC are not liable for LLC debts, but lenders typically require owners of LLC to sign personal guarantees for debts. Also, not insulated from liabilities caused by personal negligence of LLC owners.*