Part I: Multiple Choice. Circle the best answer (3 points each).

The next seven questions are based on the following information.

You are looking into purchasing a combine for your farm business. You have pulled together the following information for a combine purchase and want to calculate costs.

- Purchase price = $200,000
- Salvage value = $50,000
- Years of useful life = 10 years
- Fuel cost = $2.20/gallon
- Fuel use (gallon/acre) = 8
- Taxes = 2% of new cost
- Labor cost = $15.00/hour
- Repairs = .25%/100 hrs of use (based on new cost)
- Number of acres = 800 acres
- Hours of use per acre = 2 hrs
- Interest rate = 6.5%
- Insurance and housing = 2% of new cost

1. In a budget for combine ownership, what is the annual level of taxes?
   a. $2,000
   b. $4,000
   c. $3,000
   d. $5,000
   e. None of the above
   **Answer: b. $4,000**

2. What is the level of fuel cost per hour? (As indicated, you will use the combine on 800 acres.)
   a. $17.60
   b. $8.80
   c. $11.73
   d. $6.79
   e. None of the above.
   **Answer: b. $8.80**

3. In a budget for combine ownership, what is the annual depreciation? (Use straight line as you did in Lab 9).
   a. $12,500
   b. $15,000
   c. $20,000
   d. $25,000
   e. None of the above.
   **Answer: b. $15,000**

4. In a budget for combine ownership, what is the annual interest cost?
   a. $13,000
   b. $8,125
   c. $6,500
   d. $4,875
   e. None of the above.
   **Answer: b. $8,125**

5. In a budget for combine operating (variable) cost, what is the annual repair cost per acre?
   a. $20.00
   b. $15.00
   c. $10.00
   d. $7.50
   e. None of the above.
   **Answer: c. $10.00**
6. If you use the combine for 600 acres rather than the 800 acres, what happens to your operating (variable) cost per acre?
   a. Remains unchanged.
   b. Decreases.
   c. Increases.
   d. None of the above.

The following information is used for the next two questions.

You have the option of purchasing a self-propelled combine or having your neighbors, Joyce and her daughter Heather, custom harvest your crop. They will custom harvest the crop for $35.00 per acre. The purchase cost of the combine is $200,000. Given this, you calculate the annual fixed ownership cost to be $25,000 per year. Your operating cost per acre is $22.50 per acre while your fixed cost per acre is calculated to be $40.00 per acre.

7. Given this, how many acres are needed before you can justify ownership? (Don’t consider any factors such as potential yield differences, etc.)
   a. At least 1,111.11 acres
   b. At least 1,428.57 acres
   c. At least 1,150 acres
   d. At least 2,000 acres
   e. None of the above.

8. With further calculation, you conclude that if you have Joyce and Heather custom combine your soybean crop they will have a combine with more current harvesting technology. However, you are paying them $35.00 per acre so they travel at a rapid speed for harvesting so they can get over as many areas as possible. The net effect is you get one bushel less of soybeans per acre. You project that the soybean price will be $6.50 per bushel. Given this, what is the break even number of acres? (With this calculation, assume that the other costs are as provided in the prior question.)
   a. At least 4,166.67 acres
   b. At least 8,000 acres
   c. At least 942.76 acres
   d. At least 1,315.79 acres
   e. None of the above.

9. Disadvantages of land ownership would include:
   a. frees up working capital, operation size is more flexible, financial obligations are more flexible
   b. security of tenure, pride of ownership, high return on capital (ROA)
   c. pride of ownership, management independence, operation size is more flexible
   d. can have cash flow problems, lower returns on capital, less working capital
   e. None of the above.

10. Advantages of leasing land would include:
    a. frees up working capital, operation size is more flexible, financial obligations are more flexible
    b. security of tenure, pride of ownership, cannot be used as loan collateral
    c. financial obligations are less flexible, access to additional management, frees up working capital
    d. cannot be used as loan collateral, no pride of ownership, financial obligations are more flexible
11. The following can be methods of gaining control of capital:
   a. debt (or borrowed) capital
   b. lease the asset
   c. outside equity
   d. your net worth
   e. all of the above

12. The landlord bears the least risk with:
   a. a cash rent lease
   b. a custom farming contract
   c. a mix of base cash rent and crop share lease
   d. a 50-50 crop share rent lease

13. The Iowa Land Value Survey for 2004, which was handed out in class, discussed some negative factors impacting land value in 2004. They included:
   a. reduced government payments
   b. higher interest rates
   c. reduced investment demand
   d. cash flow concerns
   e. all of the above

14. The Farm Credit System provides the following types of credit to agriculture:
   a. long-term such as for real estate
   b. intermediate-term such as for a building
   c. short-term such as for feeder cattle purchase
   d. all of the above types of credit are types of credit commercial banks provide.

15. There are various sources of credit for agricultural purposes in Iowa. Between 1999 to December 2003 this agency increased its share of credit in the agricultural market.
   a. the Farm Service Agency
   b. commercial banks
   c. life insurance companies
   d. individuals and others
   e. Farm Credit System

Now you are a veteran at Econo 330 One Stop Bank and doing your own loan analysis. Christy Cyclone comes to you for a loan and provides the following information from her farm financial records:

Total Assets = $300,000
Rate of return on equity = 5%
Return to Assets = $30,000
Total debt = $300,000
Interest rate = 8%

16. Given this, what is the maximum debt-to-asset ratio that Christy can go to?
   a. 33.33 percent
   b. 125 percent
   c. 60 percent
   d. 40 percent
   e. 50 percent
The next five questions are based on the following information. You have bought a tractor. The purchase price is $80,000. You will borrow $75,000 and use $5,000 from the sale of soybeans to pay for the tractor. The $75,000 loan will be paid off over 5 years with an interest rate of 7.5 percent. The loan will be paid annually. A table provided may help with some of the questions.

17. If you have an equal principal payment plan, how much interest do you pay with your fourth annual payment?
   a. $3,375
   B. $2,250
   c. $1,125
   d. $4,500
   e. None of the above.

18. For the equal total payment plan, how much principal do you pay in the first year?
   a. $18,537
   b. $5,625
   c. $15,000
   d. $12,912
   e. Can’t determine with the information provided.

19. For the equal principal payment plan, how much interest will you have paid in total after you have made your third payment? This is the total interest for the first three years.
   a. $17,950
   b. $14,625
   c. $13,500
   d. $3,375
   e. Can’t determine with the information provided.

20. If you have an equal total payment plan, what is the level of payment (principal and interest) will you make in year 3?
   a. $18,537
   B. $12,912
   c. $16,793
   d. $15,704
   e. Can’t determine with the information provided.

21. For the equal total payment plan, how much interest do you pay in the second year?
   a. $5,625.00
   b. $4,500.00
   c. $4,656.60
   d. $4,897.56
   e. $4,346.16

22. Location of production of products such as corn, cattle or any product can be impacted by:
   a. climate
   b. social and population
   c. distance to markets
   d. comparative advantage
   e. All of the above are factors which impact where products are produced.
23. According to Tim Fevold, Hertz Farm Management:
   a. more than 75 percent of the land in Iowa is farmed by the owner
   b. more than half of the land in Iowa is farmed by the owner
   c. about 80 percent of the land in Iowa is farmed by a tenant
   d. about 40 percent of the land in Iowa is farmed by the owner
   e. None of the above.

   Tim Fevold of Hertz Farm Management indicated that:
   a. most land in Iowa is rented through a cash share lease
   b. most land in Iowa is rented through a variable type lease
   c. most land in Iowa is under a custom farming arrangement
   d. slightly over one-half of the leases in Iowa are written
   e. a and d above

25. According to Tim Fevold, Hertz Farm Management, the four items you need in a land lease arrangement are:
   a. division of income and expenses
   b. signatures
   c. length of the term of the lease
   d. description of property
   e. all of the above are needed

26. Mr. James Wright provided the following information and would like to know what returns per $100 fed fed was for his cattle feeding operation.

   Sales  230,000
   Inventory change  +$10,000
   Cattle purchases  $120,000
   Value fed fed  $70,000

   Given this, what is the return per $100 fed fed?
   a. $342.86
   b. $328.57
   c. $200.00
   d. $171.43
   e. None of the above.

27. Given the above information, Mr. James Wright:
   a. made money (profit) in the cattle feeding operation
   b. lost money in the cattle feeding operation
   c. Can't determine with the information provided.
28. Mr. James Wright provided you with the following information:

- Value of farm production: $200,000
- Net worth: $500,000
- Total liabilities: $300,000

Given this, what is the asset turnover for Mr. James Wright?

a. 4.0
b. .25
c. .4
d. 1.0
e. None of the above.

29. Mr. James Wright has the opportunity to feed out cattle this year. You helped him pull together the following information:

- Projected variable costs: $210,000
- Projected fixed costs: $40,000
- Projected total production costs: $250,000
- Projected income: $200,000

Given this information:

a. Mr. Wright should leave the feedlot empty this year
b. Mr. Wright should place cattle in the feedlot this year
c. The economic situation is the same for either choice, place cattle or not place cattle, that Mr. Wright makes
d. There is not sufficient information to determine if cattle should be placed in the feedlot this year

**Part II. Bonus Question (2 pts.)**

You will have a great Thanksgiving Break and come back renewed and ready to finish off the semester in grand fashion.

____ True
____ False

**HINT:** “False” is not an acceptable answer.
### Table 1: Amortization Factors for Equal Total Payment

<table>
<thead>
<tr>
<th>Years</th>
<th>1.04000</th>
<th>1.04500</th>
<th>1.05000</th>
<th>1.05500</th>
<th>1.06000</th>
<th>1.06500</th>
<th>1.07000</th>
<th>1.07500</th>
<th>1.08000</th>
<th>1.08500</th>
<th>1.09000</th>
<th>1.09500</th>
<th>1.10000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.53020</td>
<td>0.54000</td>
<td>0.55380</td>
<td>0.56162</td>
<td>0.57000</td>
<td>0.58000</td>
<td>0.59000</td>
<td>0.60000</td>
<td>0.61000</td>
<td>0.62000</td>
<td>0.63000</td>
<td>0.64000</td>
<td>0.65000</td>
</tr>
<tr>
<td>3</td>
<td>0.63355</td>
<td>0.66377</td>
<td>0.69272</td>
<td>0.72065</td>
<td>0.74850</td>
<td>0.77635</td>
<td>0.80420</td>
<td>0.83205</td>
<td>0.86000</td>
<td>0.88805</td>
<td>0.91610</td>
<td>0.94415</td>
<td>0.97220</td>
</tr>
<tr>
<td>4</td>
<td>0.73745</td>
<td>0.77746</td>
<td>0.82635</td>
<td>0.87415</td>
<td>0.92185</td>
<td>0.96945</td>
<td>1.01705</td>
<td>1.06465</td>
<td>1.11225</td>
<td>1.15985</td>
<td>1.20745</td>
<td>1.25505</td>
<td>1.30265</td>
</tr>
<tr>
<td>5</td>
<td>0.84203</td>
<td>0.88773</td>
<td>0.93937</td>
<td>0.99101</td>
<td>1.04265</td>
<td>1.09429</td>
<td>1.14593</td>
<td>1.19757</td>
<td>1.24921</td>
<td>1.29986</td>
<td>1.35150</td>
<td>1.40314</td>
<td>1.45479</td>
</tr>
<tr>
<td>6</td>
<td>0.94835</td>
<td>1.00887</td>
<td>1.06885</td>
<td>1.12883</td>
<td>1.18881</td>
<td>1.24879</td>
<td>1.30877</td>
<td>1.36875</td>
<td>1.42873</td>
<td>1.48871</td>
<td>1.54869</td>
<td>1.60867</td>
<td>1.66865</td>
</tr>
<tr>
<td>7</td>
<td>1.05615</td>
<td>1.12052</td>
<td>1.18489</td>
<td>1.24926</td>
<td>1.31363</td>
<td>1.37800</td>
<td>1.44237</td>
<td>1.50674</td>
<td>1.57111</td>
<td>1.63548</td>
<td>1.69985</td>
<td>1.76422</td>
<td>1.82859</td>
</tr>
<tr>
<td>8</td>
<td>1.16507</td>
<td>1.24144</td>
<td>1.31781</td>
<td>1.39418</td>
<td>1.47055</td>
<td>1.54692</td>
<td>1.62329</td>
<td>1.69966</td>
<td>1.77603</td>
<td>1.85239</td>
<td>1.92876</td>
<td>2.00513</td>
<td>2.08150</td>
</tr>
<tr>
<td>9</td>
<td>1.27579</td>
<td>1.35611</td>
<td>1.43643</td>
<td>1.51675</td>
<td>1.59707</td>
<td>1.67739</td>
<td>1.75771</td>
<td>1.83803</td>
<td>1.91835</td>
<td>1.99867</td>
<td>2.07899</td>
<td>2.15931</td>
<td>2.23963</td>
</tr>
<tr>
<td>10</td>
<td>1.38764</td>
<td>1.46920</td>
<td>1.55072</td>
<td>1.63224</td>
<td>1.71376</td>
<td>1.79529</td>
<td>1.87682</td>
<td>1.95834</td>
<td>2.03986</td>
<td>2.12139</td>
<td>2.20292</td>
<td>2.28444</td>
<td>2.36597</td>
</tr>
</tbody>
</table>

### Table 1 (Continued): Amortization Factors for Equal Total Payment

<table>
<thead>
<tr>
<th>Years</th>
<th>1.10500</th>
<th>1.11000</th>
<th>1.11500</th>
<th>1.12000</th>
<th>1.12500</th>
<th>1.13000</th>
<th>1.13500</th>
<th>1.14000</th>
<th>1.14500</th>
<th>1.15000</th>
<th>1.15500</th>
<th>1.16000</th>
<th>1.16500</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.50606</td>
<td>0.50933</td>
<td>0.51260</td>
<td>0.51588</td>
<td>0.51916</td>
<td>0.52243</td>
<td>0.52571</td>
<td>0.52909</td>
<td>0.53247</td>
<td>0.53585</td>
<td>0.53923</td>
<td>0.54261</td>
<td>0.54600</td>
</tr>
<tr>
<td>3</td>
<td>0.60466</td>
<td>0.60921</td>
<td>0.61376</td>
<td>0.61831</td>
<td>0.62286</td>
<td>0.62741</td>
<td>0.63196</td>
<td>0.63652</td>
<td>0.64107</td>
<td>0.64563</td>
<td>0.64918</td>
<td>0.65274</td>
<td>0.65629</td>
</tr>
<tr>
<td>4</td>
<td>0.70500</td>
<td>0.71050</td>
<td>0.71600</td>
<td>0.72151</td>
<td>0.72701</td>
<td>0.73251</td>
<td>0.73801</td>
<td>0.74352</td>
<td>0.74902</td>
<td>0.75452</td>
<td>0.76002</td>
<td>0.76552</td>
<td>0.77102</td>
</tr>
<tr>
<td>5</td>
<td>0.80718</td>
<td>0.81378</td>
<td>0.82038</td>
<td>0.82698</td>
<td>0.83358</td>
<td>0.84018</td>
<td>0.84677</td>
<td>0.85337</td>
<td>0.85997</td>
<td>0.86657</td>
<td>0.87317</td>
<td>0.87977</td>
<td>0.88637</td>
</tr>
<tr>
<td>6</td>
<td>0.91107</td>
<td>0.91767</td>
<td>0.92427</td>
<td>0.93087</td>
<td>0.93746</td>
<td>0.94406</td>
<td>0.95066</td>
<td>0.95726</td>
<td>0.96386</td>
<td>0.97046</td>
<td>0.97706</td>
<td>0.98366</td>
<td>0.99026</td>
</tr>
<tr>
<td>7</td>
<td>1.01601</td>
<td>1.02261</td>
<td>1.02921</td>
<td>1.03581</td>
<td>1.04240</td>
<td>1.04900</td>
<td>1.05559</td>
<td>1.06219</td>
<td>1.06879</td>
<td>1.07539</td>
<td>1.08199</td>
<td>1.08859</td>
<td>1.09519</td>
</tr>
<tr>
<td>8</td>
<td>1.12208</td>
<td>1.12868</td>
<td>1.13528</td>
<td>1.14188</td>
<td>1.14848</td>
<td>1.15508</td>
<td>1.16168</td>
<td>1.16828</td>
<td>1.17488</td>
<td>1.18148</td>
<td>1.18808</td>
<td>1.19468</td>
<td>1.20128</td>
</tr>
<tr>
<td>9</td>
<td>1.23020</td>
<td>1.23680</td>
<td>1.24340</td>
<td>1.24999</td>
<td>1.25659</td>
<td>1.26319</td>
<td>1.26979</td>
<td>1.27639</td>
<td>1.28299</td>
<td>1.28959</td>
<td>1.29619</td>
<td>1.30279</td>
<td>1.30939</td>
</tr>
<tr>
<td>10</td>
<td>1.33992</td>
<td>1.34652</td>
<td>1.35312</td>
<td>1.35972</td>
<td>1.36632</td>
<td>1.37292</td>
<td>1.37952</td>
<td>1.38612</td>
<td>1.39272</td>
<td>1.39932</td>
<td>1.40592</td>
<td>1.41252</td>
<td>1.41912</td>
</tr>
</tbody>
</table>