Assignment #1

Please type your assignment. The assignment is due on October 24, 5pm. Please submit your assignment in class or put in my mailbox in the Finance Department, Commerce Building. No late assignment is allowed. Please show all your work, inputs and/or spreadsheet to get full credit. You will get zero point if you provide only answers without steps.

1. Organic Meat Company has a debt-equity ratio of 1.6. Return on assets is 5.5 percent, and total equity is $550,000.
   (a) What is the equity multiplier (i.e., assets/equity)?
   (b) What is the return on equity?
   (c) What is the net income?

2. You lost your notebook computer worth of $48,000. To make sure you learn from the experience, your father would support you to buy another computer, but require you to deliver the monthly payment of $1,000, with first payment made today. He insists to charge you 4.8% APR. How long does it take for you to pay back the money you owe to your father?

3. You have gained huge success in your professional career. You would set up an endowment to sponsor scholarships for students from low income families. You expect that scholarships can support $50,000 each student for six students per year, and the support can continue forever. If you require the endowment be ready in 5 years, assuming the annual interest rate is 3.6 percent for all future time periods, then
   (a) how large must the endowment be?
   (b) how much will you deposit each year (assume you make end-of-year deposits)?

4. Mr. Black wants to buy a luxury boat which costs $25,250,000, and Mr. Black has $3,500,000 as a down payment for his purchase. There are two banks which would provide financing for him. HSBC offers 5.6% APR compounded monthly for financing for five years. Citibank offers a three-year loan at 7.2% APR compounded monthly. What is Mr. Black's monthly payment under each financing plan?

5. You buy a $1,360,000 car today with $200,000 as a down payment. You decide to finance the remainder of the purchase price with a 48-month loan at 6.3% APR compounded monthly. Three years from now you plan to sell or trade in this car in order to buy a new car. You anticipate the car’s resale or trade in value will be $420,000 three years from now, and you plan to use the difference between the trade in value and the remaining loan balance as a down payment for the new car purchase. How large will the down payment be on your planned new car purchase 36 months from now?

6. An All-Pro defensive lineman is in contract negotiations. The team has offered the following salary structure:

<table>
<thead>
<tr>
<th>Year</th>
<th>Salary</th>
</tr>
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<tbody>
<tr>
<td>0</td>
<td>$ 5,000,000</td>
</tr>
<tr>
<td>1</td>
<td>$ 3,000,000</td>
</tr>
<tr>
<td>2</td>
<td>$ 3,800,000</td>
</tr>
</tbody>
</table>
3 $ 4,700,000  
4 $ 5,400,000  
5 $ 6,000,000  
6 $ 6,500,000  

All salaries are to be paid in lump sums. The player has asked you as his agent to renegotiate the terms. He wants a $6.5 million signing bonus payable today. He also wants an equal salary paid every three months (i.e. assume quarterly compounding), with the first paycheck three months from now. If the annual interest rate is 4 percent, what is the amount of his quarterly check?

7. You are serving on a jury. A plaintiff is suing the city for injuries sustained after a freak street sweeper accident. In the trial, doctors testified that it will be four years before the plaintiff is able to return to work. The jury has already decided in favor of the plaintiff. You are the foreperson of the jury and propose that the jury give the plaintiff an award to cover the following: (1) The present value of two years' back pay. The plaintiff's annual salary for the last two years would have been $38,000 and $42,000, respectively. (2) The present value of four years' future salary. You assume the salary will be $45,000 per year. (3) $175,000 for pain and suffering. (4) $25,000 for court costs. Assume that the salary payments are equal amounts paid at the end of each month. If the interest rate you choose is an 3.2 percent EAR, what is the size of the settlement?

8. You are considering to purchase a high quality coffee machine, which is sold for $17,990, for your dad. Fortunately, you find a promotion offering an installment plan of paying $1,590 each month for 12 months. What is the APR for this coffee machine purchase plan? What is the effective annual rate you are actually paying in this plan?

9. You are hired as a financial planner. Please work out an amortization schedule for a five-year loan of $168,000 which requires equal annual payments. The interest rate is 2.8% per year. How much interest is paid in the second year? What is the principal payment in the third year?

10. Spacecraft Corp. shows the following information on its 2017 income statement: sales = $126,800; costs = $84,000; other expenses = $4,800; depreciation expense = $7,000; interest expense = $16,000; taxes = $4,500; dividends = $3,830. In addition, you're told that the firm issued $6,200 in new equity during 2013 and redeemed $6,400 in outstanding long-term debt.
   (a) What is the 2017 operating cash flow?
   (b) What is the 2017 cash flow to creditors?
   (c) What is the 2017 cash flow to stockholders?
   (d) If net fixed assets increased by $3,700 during the year, what was the addition to NWC?