

1. Compute the future value of \$1,000 compounding annually for:
 - a. 10 years at 5%
 - b. 10 years at 10%
 - c. 20 years at 5%
 - d. Why is the interest earned in part (c) not twice the amount earned in part (a)?

2. Solve for the interest rate in each of the following, assume end of period payment:

Present Value	Years	Future Value	Interest Rate
\$250	4	318	
\$410	8	896	
18,750	27	483,500	

3. Solve for the unknown number of periods in each of the following:

Present Value	Interest Rate	Future Value	Years
625	9%	1284	
810	11%	4341	
18,400	17%	402,662	
21,500	8	173,439	

4. Solve for the present value in each of the following:

Years	Interest Rate	Future Value	Present Value
6	7%	13827	
9	15	43852	
18	11	725380	
23	18	590710	

5. Suppose someone is preparing a "quote sheet" for their mortgage salespeople. This is a calculation of the monthly payment for a \$10,000 debt spread over 30-years of end-of-month payments. The salesperson then just multiplies that payment based on the size of the mortgage borrowing the customer wants to make. For example, if a customer needs to borrow \$100,000; $100,000/10,000 = 10$. The salesperson would take the monthly payment and multiply by 10 to tell the customer the size of their payments. If they borrow 210,000, the salesperson multiplies the payment by 21.

If the interest rate is 4.9% on \$10,000, then:

- a. How much is the monthly payment for the 30-year mortgage?
- b. How much do they pay in interest for the 30 years?
- c. If the average mortgage is for 180,000, how much is the payment, and how much interest is paid over the 30 years?

FINANCIAL STATEMENTS – CASE ONE

You have been hired to perform an analysis of a small, specialized firm in a competitive industry. To get you started, you are provided with the following financial statements. You are also given the industry ratios in which this firm competes.

2013 Income Statement

Sales	234,300,000
Cost of goods sold	165,074,000
Other expenses	27,991,000
Depreciation	7,644,000
EBIT	33,591,000
Interest	4,212,600
Taxable Income	29,378,400
Taxes (40%)	11,751,360
Net Income	17,627,040

Dividends:	5,288,112
Add to RE	\$12,338,928

2013 Balance Sheet

Current Assets		Current Liabilities	
Cash	3,650,700	Accounts Payable	7,753,000
Receivables	6,567,600	Notes Payable	15,936,300
Inventory	7,363,700		
Total	17,582,000	Total	23,689,300
Fixed Assets		Long Term Debt	40,480,000
Net P & E	112,756,900	Shareholders' equity	
		Common stock	6,200,000
		Retained Earnings	59,969,600
		Total Equity	66,169,600
Total Assets	130,338,900	Total Liability and Equity	130,338,900

Industry Ratios

	Lowest Quartile	Median	Highest Quartile
Current	0.50	1.43	1.89
Quick	0.21	0.38	0.62
Total asset turnover	0.68	0.85	1.38
Inventory turnover	6.85	9.15	16.13
Receivable turnover	6.27	11.81	21.45
Debt	0.44	0.52	0.61
Debt-equity	0.79	1.08	1.56
Equity multiplier	1.79	2.08	2.56
Interest coverage	5.18	8.06	9.83
Profit margin	4.05%	6.98%	9.87%
Return on assets	6.05%	10.53%	15.83%
Return on equity	9.93%	16.54%	28.14%

You need to:

1. Calculate all of the ratios listed in the industry table for your client's firm.
2. Compare the performance of the firm to the industry as a whole. For each ratio, comment on why it might be viewed as positive or negative relative to the industry. Suppose you create an inventory ratio calculated as inventory divided by current liabilities. How do you interpret this ratio? How does your client compare to the industry average?
3. Calculate the sustainable growth rate of your client's firm.
4. As a practical matter, your client refused to raise external equity capital, in part because she doesn't want to dilute her existing ownership and control positions. However, she still plans for a 20% growth rate for next year. What are your conclusions and recommendations about the feasibility of her expansion plan?
5. Most assets can be increased as a percentage of sales. For example, cash can be increased by any amount. However, fixed assets often must be increased in specific amounts because it is impossible to buy half a machine. In this case, a company has a "staircase" fixed cost structure. Assume your client's firm is currently producing at 100% of capacity. As a result, to expand production, the company must set up an entirely new line at a cost of \$30 million. Calculate the new EFN with this assumption. What does this imply about capacity utilization for her firm next year?