Introduction to Finance

Problem Set 1

Question 1

The Robinson Company has the following current assets and current liabilities for these two years:

	2016	2017
Cash and marketable securities	$50,000	$50,000
Accounts receivable	$300,000	$350,000
Inventories	$350,000	$500,000
Total current assets	$700,000	$900,000
Accounts payable	$200,000	$250,000
Bank loan	$0	$150,000
Accruals	$150,000	$200,000
Total current liabilities	$350,000	$600,000

- a. Compare the current ratios between the two years.
- b. Compare the acid-test ratios between 2016 and 2017. Comment on your findings.

Question 2

The Robinson Company had cost of goods sold of $1,000,000 in 2016 and $1,200,000 in 2017.

- a. Calculate the inventory turnover for each year. Comment on your findings.
- b. What would inventories have been in 2017 if the 2016 turnover ratio had been maintained?

Question 3

The Dayco Manufacturing Company had the following financial-statement results for last year. Net sales were $1.2 million, net income was $90,000, and total assets at year-end were $900,000.

- a. Calculate Dayco's asset-turnover ratio and profit margin.
- b. Show how the two ratios in part (a) can be used to determine Dayco's return on assets.
- c. Dayco's industry-average ratios are: return on assets, 11%; asset turnover, 2.5 times; and net profit margin, 3.6%. Compare Dayco's performance with the industry averages.

Question 4

There are two periods in this problem: today (t = 0) and tomorrow (t = 1). Assume an individual has $1,000 today. The individual can invest in machines that will produce a risk-free return of 20%.

- a. How much will the individual have in the next period after investing all $1,000 in machines? What if only $750 is invested?
- b. The market interest rate is 7%. Instead of investing, the individual can lend the money and earn interest during the next period. How much will the individual have in the next period after lending everything? What if $750 is invested and $250 is lent?
- c. The bank agrees to lend funds based on what the individual will have in the next period. The bank regards the investment as risky, so it applies an interest rate of 10%. (i) What do we call the difference between the market interest rate and the bank's rate? (ii) How much can the individual borrow after investing $750? After investing $1,000?
- d. Draw a diagram showing these possibilities. Conclude which strategy is the most profitable.

Question 5

TelecomCo reports annual revenues of $10 billion**.** It pays $2.5 billion to other telecommunications companies for the use of their networks. These payments are operating expenses and should normally be recorded immediately in the income statement.

Suppose that, instead, TelecomCo improperly records $1 billion of these payments as an investment in a long-term asset.

Assume all other operating expenses amount to $6 billion and ignore taxes and depreciation.

- a. Calculate TelecomCo's operating income if the network payments are accounted for correctly.
- b. Calculate reported operating income if $1 billion of network payments is improperly capitalized.
- c. By how much are:
  - operating income overstated?
  - assets overstated at the end of the period?
- d. The $1 billion payment was made in cash. Explain how the improper capitalization affects:
  - cash flow from operating activities;
  - cash flow from investing activities;
  - total change in cash ;
- e. Why might managers have an incentive to capitalize an operating expense rather than expense it immediately?