

Problem set 4

Finance



Solutions: Problem Set 4 Determining Profit or Loss from an Investment.

Three years ago, you purchased 150 shares of IBM stock for \$88 a share.

Today, you sold your IBM stock for \$103 a share. For this problem, ignore commissions that would be charged to buy and sell your IBM shares.

a. What is the amount of profit you earned on each share of IBM stock?

Profit per share =

Selling price – Purchase price

Profit per share =

103 – 88

Profit per share =

\$15

b. What is the total amount of profit for your IBM investment?

Total Profit

=

Profit per share * no. of shares

Total Profit

=

15 * 150

Total Profit

=

\$ 2, 250. 00

2. Calculating Rate of Return. Assume that at the beginning of the year, you purchase an investment for \$8, 000 that pays \$100 annual income. Also assume the investment's value has decreased to \$7, 400 by the end of the year.

a. What is the rate of return for this investment?

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b. Is the rate of return a positive or negative number?

The rate of return is negative because of capital loss which resulted from a decrease in investment value.

3. Calculating Earnings Per Share, Price-Earnings Ratio, and Book Value. As a stockholder in Bozo Oil Company, you receive its annual report. In the financial statements, the firm has reported assets of \$9 million, liabilities of \$5 million, after-tax earnings of \$2 million, and 750, 000 outstanding shares of common stock.

a. Calculate the earnings per share of Bozo Oil's common stock. (p. 457)

b. Assuming that a share of Bozo Oil's common stock has a market value of \$40, what is the firm's price-earnings ratio? (p. 457)

P/E multiple

P/E multiple =

c. Calculate the book value of a share of Bozo Oil's common stock. (p. 461)

4. Determining Interest and Approximate Bond Value. Assume that three years ago, you purchased a corporate bond that pays 9.5 percent. The purchase price was \$1, 000. Also assume that three years after your bond investment, comparable bonds are paying 8 percent.

a. What is the annual dollar amount of interest that you will receive from your bond investment?

$\$1,000 \times 9.5 \text{ percent} = \95 annual dollar amount of interest

b. Assuming that comparable bonds are paying 8 percent, what is the

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approximate dollar price for which you could sell your bond?

c. In your own words, explain why your bond increased or decreased in value.

The bond appreciated in value because you possessed a bond with a fixed rate of 9.5% during a time period when market rates were declining.

Interest rates and bond prices are inversely proportional which is why a decrease in comparable rates increases the market value of the fixed rate bond.

5. Using Margin. Bill Campbell invested \$4,000 and borrowed \$4,000 to purchase shares in Wal-Mart. At the time of investment, Wal-Mart was selling for \$45 a share.

a. If Bill paid \$30 commission, how many shares could Bill buy if he used only his own money and did not use margin?

$\$4,000 - \$30 \text{ commission} = \$3,970$ funds for investment remain after commission

b. If Bill paid \$50 commission, how many shares could Bill buy if he used his \$4,000 and borrowed \$4,000 on margin to buy Wal-Mart stock?

$\$4,000 + \$4,000 \text{ Margin} = \$8,000$ total funds available for investment

$\$8,000 - \$50 \text{ commission} = \$7,950$ funds for investment after commission

$\$7,950 / \$45 \text{ a share} = 176.667$ shares

c. Assuming that Bill did use margin, paid \$90 commission to sell his stock, and sold his Wal-Mart stock for \$53, how much profit did he make on his Wal-Mart investment?

Profit per share = Selling price - purchase price

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$\$53 - \$45 = \$8$ per share profit

$\$8$ per share profit \times 176.667 number of shares using margin = $\$1,413.33$
profit

$\$1,413.33 - \90 commission = $\$1,323.33$ total profit after commissions

6. Calculating yields. Assume you purchased a corporate bond at its current market price of $\$850$ on January 2, 2002. It pays 9 percent interest and it will mature on December 31, 2011, at which time the corporation will pay you the face value of $\$1,000$.

- a. Determine the current yield on your bond investment at the time of purchase.
- b. Determine the yield to maturity on your bond investment.