FIN104 Tutorial Questions - Week 6

1. P/E Ratios. Favorita Candy's stock is expected to earn $2.40 per share this year. Its P/E ratio is 18. What is the stock price? (CH7.Q4)

P/E ratio = price/earnings

$$18.0 = P_0/2.40 \Rightarrow P_0 = \$43.20$$

2. Dividend Discount Model. True or False? (CH7.Q11)

a. Investors will invest in a stock only if it gives a higher return than they could get elsewhere. Therefore, if a stock is fairly priced, its expected return will be greater than the cost of equity capital.

b. A stock that is expected to pay a level dividend in perpetuity has a value of P0 = DIV1/r. Any company that can reinvest to grow its earnings will have a greater value.

c. The dividend discount model is still logically correct even for stocks that do not currently pay a dividend.

a. False. If the stock is fairly priced, the expected return will be equal to the equity cost of capital.

b. False. Plowing back earnings to fund growth does not necessarily lead to the highest value company. To be successful, the growth opportunity must be sufficiently valuable to offset the reduced dividend payout**.**

c. True. The dividend discount model allows for the fact that firms may not currently pay dividends. The stock price today can still reflect the present value of the future expected per-share stream of dividends.

3. **Constant-Growth Model. Arts and Crafts Inc. will pay a dividend of $5 per share in 1 year. It sells at $50 a share, and firms in the same industry provide an expected rate of return of 14%. What must be the expected growth rate of the company's dividends? (CH7.Q14)**

$$\$50 = \frac{\$5}{0.14 - g}$$

$$g = 0.14 - \frac{\$5}{\$50} = 0.04 = 4.0\%$$

4. **Constant-Growth Model. A stock sells for $40. The next dividend will be $4 per share. If the rate of return earned on reinvested funds is a constant 15% and the company reinvests a constant 40% of earnings in the firm, what must be the discount rate? (CH7.Q15)**

$g = \text{return on equity} \times \text{plowback ratio} = 0.15 \times 0.40 = 0.06 = 6.0\%$

$40 = \dfrac{4}{r - 0.06} \Rightarrow r = \dfrac{4}{40} + 0.06 = 0.16 = 16.0\%$

5. **Constant-Growth Model. Gentleman Gym just paid its annual dividend of $3 per share, and it is widely expected that the dividend will increase by 5% per year indefinitely. (CH7.Q16)**
   a. What price should the stock sell at? The discount rate is

15%.

$$P_0 = \frac{DIV_1}{r-g} = \frac{\$3 \times 1.05}{0.15-0.05} = \$31.50$$

b. How would your answer change if the discount rate was only 12%? Why does the answer change?

$$P_0 = \frac{\$3 \times 1.05}{0.12-0.05} = \$45$$

The lower discount rate makes the present value of future dividends higher

6. **Nonconstant Growth. Tattletale News Corp. has been growing at a rate of 20% per year, and you expect this growth rate in earnings and dividends to continue for another 3 years. (CH7.Q29)**
   a. If the last dividend paid was $2, what will the next dividend be?

   DIV₁ = $2 * 1.20 = $2.40

   b. If the discount rate is 15% and the steady growth rate after 3 years is 4%, what should the stock price be today?

   $$DIV1 = \$2.40, DIV2 = \$2.88, DIV3 = \$3.456$$

   $$P_3 = \frac{\$3.456 \times 1.04}{0.15-0.04} = \$32.675$$

   $$P_0 = \frac{\$2.40}{1.15} + \frac{\$2.88}{(1.15)^2} + \frac{\$3.456 + \$32.675}{(1.15)^3} = \$28.021$$