Chapter 10 Problems

10.2)

\[ k = \frac{D_1}{P_0} + g \]

\[ P_0 = \frac{D_1}{(k - g)} \]
\[ = 2.25(1+.08)/(.13 - .08) \]
\[ = 2.43/.05 \]
\[ = $48.60 \]

10.3)

\[ k = \frac{D_1}{P_0} + g \]
\[ k - g = \frac{D_1}{P_0} \]
\[ g = k - \frac{D_1}{P_0} \]
\[ g = k - \left[ \frac{D_0(1+g)}{P_0} \right] \]

\[ g = .15 - \left[ \frac{\$3.00(1+g)}{50} \right] \]
\[ 50g = 7.50 - 3 - 3g \]
\[ g = 08.48 \text{ or } 8.49\% \]

10-7)

(a) (1) Stock A \[ k_A = RF + BA(RM - RF) \]
\[ = .05 + 1.0(.10 - .05) = .10 \]

(2) Stock B \[ k_B = .05 + 1.7(.10 - .05) = .135 \]

(3) Stock C \[ k_C = .05 + .8(.10 - .05) = .09 \]

(b) If RF increases to .07, required rates of return are

\[ k_A = .07 + 1.0(.03) = 1.0 \]
\[ k_B = .121 \]
\[ k_C = .094 \]

(c) If RM increases to 17%, the required rates of return also rise

\[ k_A = 0.5 +1.0(.12 - .05) = .12 \]
\[ k_B = .160 \]
\[ k_C = .106 \]
(a) Solving for $k$ as the expected rate of return

$$k = \frac{\$1.80(1.08)}{\$36} + .08 = .06 + .20 = .26 \text{ or } 26\%$$

Since the expected return of 13.4% is less than the required rate of return stock is not a good buy

(b) \[ P_0 = \frac{D_1}{k - g} = \frac{\$1.80(1.08)}{.14 - .08} = $32.40 \]

An investor should pay no more than $32.40 if their required rate of return is 14%. If the required rate of return is 15%, than the maximum price an investor should pay

\[ P_0 = \frac{\$1.80(1.08)}{.15 - .08} = $27.77 \]