1. $NPV = -P_0 + CA^{24}_{0.035} + \frac{1000}{(1.035)^{24}}$ P_0 is given as 1160.584

Set this equal to 0 to make sure the return on this investment is the SAIR of 7%...

$$1160.584 = CA^{24}_{0.035} + 437.957$$

$$\Rightarrow \quad CA^{24}_{0.035} = 722.6269$$

$$A^{24}_{0.035} = \left[\frac{1}{.035} - \frac{1}{.035(1.035)^{24}}\right] = 16.058$$

$$\text{So} \quad C = \frac{722.6269}{16.058} = \$45$$

Thus, the coupon rate is [redacted] **9%.**

2. a). In this case, Earnings remain constant;

$$P_0 = \frac{\$8.46}{0.15} = \$56.50$$

b). First we need the growth rate of the dividends: $g = ROE \cdot \%\text{ retained}$

$$\text{So} \quad g = .20 \cdot .60 = 0.12 = 12\%.$$

The first dividend will be \$3.384, so

$$P_0 = \frac{\$3.384}{r - g} = \frac{\$3.384}{.15 - .12} = \$112.80$$

c). The dividend grows, so the smaller dividend will eventually grow to larger than \$8.46. The company puts off present money for future earnings.