Formula Sheet

$$\text{PVIF}_{n,i} = \frac{1}{(1+i)^n} = (1+i)^{-n}$$

$$\text{FVIF}_{n,i} = (1+i)^n$$

$$i = \left[\frac{FV_n}{PV_0}\right]^{1/n} - 1$$

$$n = \frac{ln\left[\frac{FV_n}{PV_0}\right]}{\ln(1+i)}$$

$$\text{PVIFA}_{n,i} = \frac{1}{i}\left[1 - (1+i)^{-n}\right]$$

$$\text{FVIFA}_{n,i} = \frac{1}{i}\left[(1+i)^n - 1\right]$$

$$\text{PVIFA - Due}_{n,i} = \frac{1}{i}\left[1 - (1+i)^{-n}\right](1+i)$$

$$\text{FVIFA - Due}_{n,i} = \frac{1}{i}\left[(1+i)^n - 1\right](1+i)$$

$$\text{EIR} = \left(1 + \frac{i}{m}\right)^m - 1$$

$$j = \left[1 + \frac{i}{2}\right]^{2/m} - 1$$

$$\text{Holding Period Return} = \frac{P_t - P_{t-1}}{P_{t-1}} + \frac{D_t}{P_{t-1}}$$

$$\text{Holding Period Return} = \frac{P_t - P_{t-1}}{P_{t-1}} + \frac{C_t}{P_{t-1}}$$

$$P = \sum_{t=1}^{\infty} \frac{D}{(1+k)^t} = \frac{D}{k}$$

$$P = \sum_{t=1}^{\infty} \frac{D_0(1+g)^t}{(1+k)^t} = \frac{D_0(1+g)}{k - g} = \frac{D_1}{k - g}$$

$$P = \frac{TP_0(1+g)}{k - g} = \frac{TP_1}{k - g}$$

$$k = \frac{D_1}{P_0} + g$$

$$\frac{P_o}{EPS_1} = \frac{\text{Payout Ratio}}{k - g}$$

$$\frac{P_o}{BVPS} = \frac{\text{Price}}{\text{Book value per share}}$$

$$\rho_{ij} = \frac{COV(k_i, k_j)}{\sigma_i \sigma_j}$$

$$COV(\tilde{k}_1, \tilde{k}_2) = \sum_{i=1}^{n} Pr_i\left[k_{1i} - E(\tilde{k}_1)\right]\left[k_{2i} - E(\tilde{k}_2)\right]$$

$$\sigma = \sqrt{\sum_{i=1}^{n} Pr_i\left(k_i - E(k)\right)^2}$$

$$E(k_p) = x_1 \cdot E(k_1) + \ldots + x_n \cdot E(k_n)$$

$$\sigma = \sqrt{x^2\sigma_a^2 + (1-x)^2\sigma_b^2 + 2x(1-x)\rho_{a,b}\sigma_a\sigma_b}$$

$$E(k_i) = k_f + \beta_i(E(k_M) - k_f)$$

$$E(k_1) = \sum_{i=1}^{n} Pr_i k_{1i}$$

$$T_i = \frac{E(k_i) - k_f}{\beta_i}$$

$$\beta_i = \frac{COV(k_i, k_M)}{\sigma_M^2}$$

$$\beta_p = x_1 \cdot \beta_1 + \ldots + x_n \cdot \beta_n$$

$$\sigma_i^2 = \beta_i^2 \cdot \sigma_M^2 + \sigma_{di}^2.$$