#5 (#3, pg. 433) cont.:

$Var(L_1) = Var(U) = \frac{1}{12}$ by Table 3

$Var(L_2) = Var(-U+1) = Var(U) = \frac{1}{12}$

$\therefore \rho(L_1, L_2) = \dfrac{Cov(L_1, L_2)}{\sigma_{L_1} \sigma_{L_2}} = \dfrac{-\frac{1}{12}}{\sqrt{1/12}\sqrt{1/12}} = \underline{-1}$

#6 Let $P =$ ~~portfolio~~ $= .6S + .4B$

i. $\mu_P = E[P] = .6\mu_S + .4\mu_B$

$= .6(8\%) + .4(6\%) = 7.2\%$

ii. $\sigma_P^2 = Var[P] = (.6)^2\sigma_S^2 + (.4)^2\sigma_B^2 + 2(.6)(.4)\,Cov(S,B)$

$= .36(6^2) + .16(2^2) + .48\underbrace{(.33)(6)(2)}$ $\rho\sigma_X\sigma_Y$

$\doteq 15.5$

$\therefore \sigma_P \doteq 3.94$