**Quiz 2 Solution**

1. .08 = [(1 − .05 − x) × .104] + [.05 × .082] + [x × .046]

.08 = .0988 −.104x + .0041 + .046x

.058x = .0229

x = .39483 = 39.48 percent

2. .092 = [(1/1.72) × Re] + [(.72/1.72) × .058]

.092 = .581395Re + .024279

.581395Re = .067721

x = .11648 = 11.65 percent

3. Common stock: 8,000 × $64 = $512k

Preferred stock: 2,000 × $54 = $108k

Debt: $100,000 × 1.02 = $102k

Value = $722k

Rp = (.06 × $100) / $54 = .111111



4. ValueJ = 400 × $34 = $13,600

ValueK = 200 × $19 = $3,800

ValueL = 150 × $22 = $3,300

ValueM = 360 × $47 = $16,920

ValuePort = $13,600 + $3,800 + $3,300 + $16,920 = $37,620

Expected return = [($13,600 / $37,620) × .145] + [($3,800 / $37,620) × .087] + [($3,300 /

$37,620) × -.105] + [($16,920 / $37,620) × .069] = .052419 + .008788 − .009211 + .031033

= .083029 = 8.30 percent

5. ErBoom = (.40 × .09) + (.25 × .14) + (.35 × .26) = .036 + .035 + .091 = .162

ErNormal = (.40 × .16) + (.25 × .10) + (.35 × .12) = .064 + .025 + .042 = .131

ErPortfolio = (.15 × .162) + (.85 × .131) = .0243 + .11135 = .13565

Variance = .15(.162 − .13565)2 + .85(.131 − .13565)2 = .000104148 + .000018379 =

.000122527

Standard deviation = √.000122527 = .011069 = 1.11 percent

6.

