Quiz A for 2:30 Class: 11/19/12 Name Key

Use the following information to set up the calculations needed to determine the beta of Best Buy's assets and Best Buy's bonds.

Information on Best Buy's assets: market value = \$6 billion, book value = \$5.1 billion, standard deviation of returns = 35%, average life = 12 years,

Information on Best Buy's bonds: market value = \$2 billion, book value = \$2.1 billion, standard deviation of returns = 12%, maturity = 10 years, maturity value of debt = \$2.9 billion

Information on Best Buy's stock: market value = \$4 billion, book value = \$3 billion, standard deviation of returns = 40%, beta = 1.5

Returns on Treasuries by maturity: 1 –year = 0.2%; 5-year = 0.7%; 10-year = 1.6%; 12-year = 1.7%; 20-year = 2.2%; 30-year = 2.7%

$$+6 \quad \beta_U = \frac{1.5^{+5}}{\Delta\left(1+\frac{2^{+3}}{4_{+5}}\right)} \qquad 19$$

$$+4 \quad \Delta = N(d_1) \Rightarrow \text{look up on tables}^{+1} \text{ or in Excel} \qquad 5$$

$$+6 \quad d_1 = \frac{\ln\left(\frac{6^{+5}}{PV(K)}\right)}{{}^{+2}.35\sqrt{10}^{+2}} + \frac{{}^{+2}.35\sqrt{10}^{+2}}{2} \qquad 19$$

$$+6 \quad PV(K) = \frac{2.9^{+5}}{(1.016)_{+5}^{10^{+2}}} \qquad 18$$

$$+6 \quad \beta_D = (1-\Delta)\frac{6^{+5}}{2_{+3}}\beta_U \qquad 14$$