Key for 1:25 Quiz: 3/5/12

Quiz: Assume that markets are prefect, that the market value of MegaStore equity is $100 million, that the beta of MegaStore's equity is 0.9, and that MegaStore's equity cost of capital is 8.3%. Assume also that MegaStore is considering issuing $25 million of debt and using the proceeds to repurchase shares. The beta of the debt will equal 0.1 and the cost of capital on the debt will equal 2.3%.
a. Without doing any calculations, explain how the change will affect the cost of capital on MegaStore's equity? Why is this the case?
b. Set up the equations and plug in as many numbers as possible to determine the beta of MegaStore's equity after the change.
c. Set up the equations and plug in as many numbers as possible to determine the cost of capital on MegaStore's equity after the change.

a. MegaStore's cost of equity capital will rise because the risk faced by stockholders will rise as the least risky cash flows (the first ones) are promised to the firm's bondholders.

b. $\beta_E = 0.9 + \left(\frac{25}{75}\right)(0.9 - 0.1)$

c. $r_E = 8.3 + \left(\frac{25}{75}\right)(8.3 - 2.3)$