Quiz A for 4:00 Class: 10/29/12 Name Key

Assume a firm has outstanding debt that matures for $1,000,000 seven years from today.

65 = 75
56 = 68
54 = 64
51 = 60
43 = 57
22 = 45
21 = 42
15 = 31
14 = 29

76

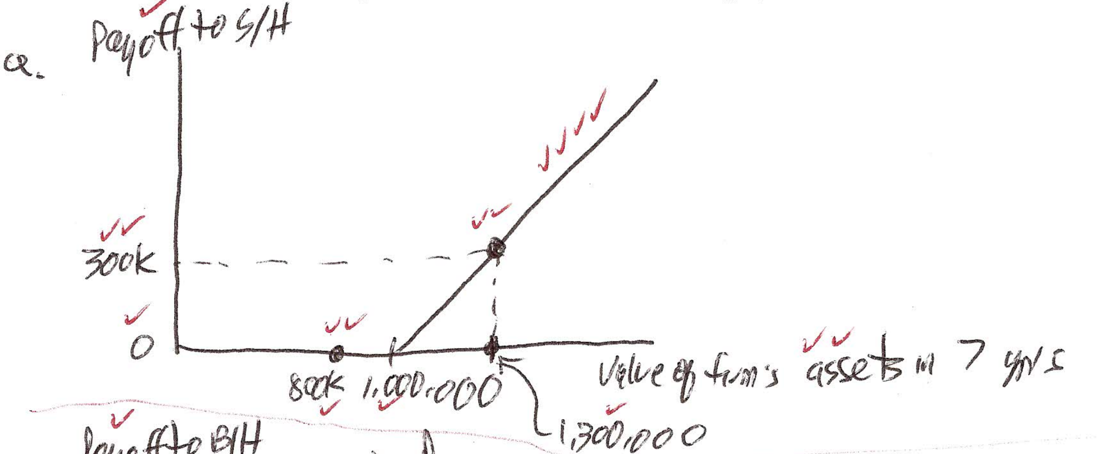
a. A firm's stock can be viewed in terms of options. From this perspective sketch a graph of the potential payoffs on the firm's stock and the specific payoffs to stockholders if the value of the firm's assets equals $800,000 or $1,300,000 seven years from today. Clearly label and put a dot at each payoff.

b. A firm's risky bonds can be viewed as a portfolio of options and risk-free bonds. From this perspective sketch a graph of the potential payoffs on the firm's bonds and the specific payoffs to bondholders if the value of the firm's assets equals $800,000 or $1,300,000 seven years from today. Be sure to show the payoffs on the options, the risk-free bond, and the combined payoff that equals the payoff on the risky bonds. Clearly label and put a dot at each specific payoff.

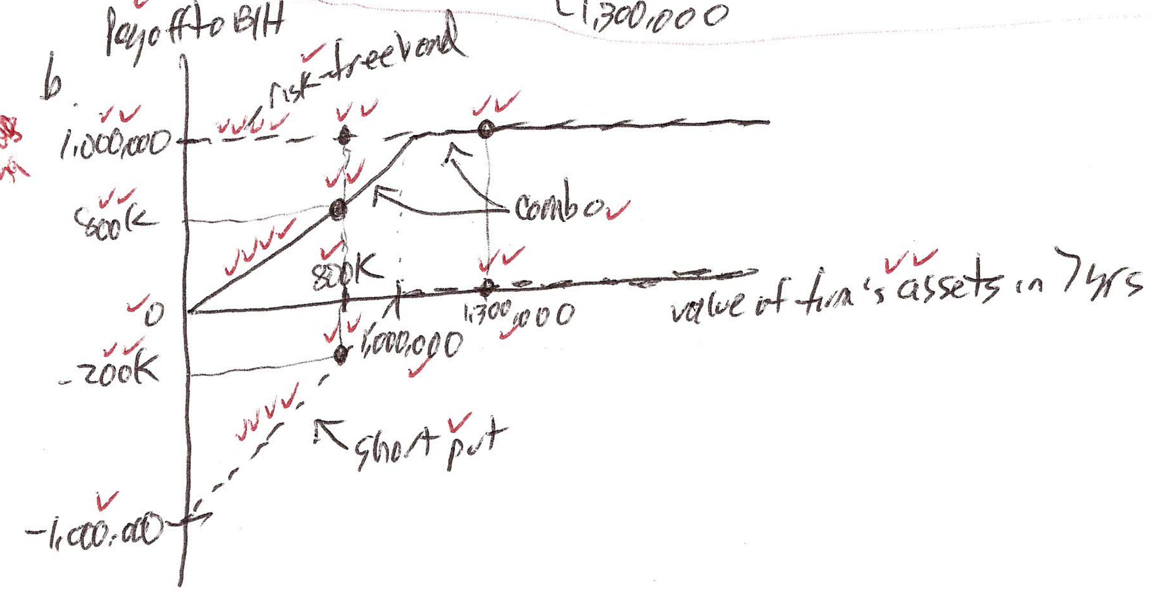
c. Explain in terms of options and risk-free bonds how an increase in the value of the firm's assets affects the value of the firm's outstanding stocks and bonds.

Wall Street Journal Questions are on the back of this page.

17 a.



b.



20 c. value of stock = call
⇒ as value of assets rise, value of call rises
value of bond = risk-free bond − put
⇒ as value of assets rise, value of put falls
⇒ value of bond rises