

Quiz A for 2:30 Class: 11/6/13

Name _____

Use the following information to answer Short Answers 1 and 2 below.

Assume that the risk-free interest rate equals 3%, that DeadBerry's current stock price is \$6.50 per share, and that there is a 60% chance that DeadBerry's stock price will fall by \$2.50 per share one year from today and a 40% chance that DeadBerry's stock will rise by \$1.50 per share one year from today.

Short Answer 1 (15 points): Calculate the value of a put with a \$6 strike price.

Short Answer 2 (15 points): Given your answer above, what portfolio of stocks and bond would be equivalent to the put?

Problem (75 points): Twit Inc (a service that sends one-word posts out to subscribers) has debt that matures for \$15 million four years from today.

- a. Sketch a graph that shows the possible payoffs on Twit's debt and the specific payoffs on the firm's debt if the firm's assets are worth \$10 and \$17 million four years from today.
- b. On a separate graph show how the payoff structure of the bonds can be duplicated with a position in Twit's assets and options. Show the specific payoffs on the individual assets and portfolio if Twit's assets are worth \$10 and \$17 million four years from today. Be sure to clearly label everything.
- c. Based only on what drives option prices, briefly discuss how the value of a firm's stock and bonds would change if the firm's assets suddenly become more volatile.

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