

Quiz B for 9:45 Class: 08/09/13

Name _____

Your firm is considering investing \$30 million in a new facility to produce Wi-Fi phones. This new facility would roughly double the size of your firm since you currently have assets with a market value of \$25 million. Your firm expects the facility to produce its first net, after-tax annual cash flow of \$6 million one year from today. Subsequent annual after-tax cash flows would grow by 1% per year through 10 years from today. The standard deviation of returns on the new facility would equal 25% over the next three years and 20% thereafter. This is higher than the standard deviation of returns on your firm's existing assets: 21% over the next two years and 15% thereafter. If sales exceed expectations, the facility can be expanded three years from today for \$15 million. This expansion would generate expected cash flows of \$3 million per year for 7 years. The standard deviation of returns on this expansion equals 28%. The risk-free interest rate varies by maturity as follows: 1 – year = 1%, 2 – year = 1.9%, 3 – year = 2.1%, 4 – year = 2.4%, 5 – year = 2.5%, 6 – year = 2.6%; 7 – year = 2.7%, 10 – year = 2.8%.

Set up the calculations needed to determine whether the facility should be built if the cost of capital for the facility equals 12% per year and on the expansion equals 14% per year. You do not need to solve anything.