Quiz A: 7/24/14   Name _____

Note: Answer parts a, b, and c on the same graph. Be sure you clearly label which part of the graph answers which part of the question.

Assume T-bills earn a return of 3%, that Johnson Controls (JCI) has a standard deviation of returns of 11% and an expected return of 8%, and that Protalix Bio Therapeutics (PLX) has a standard deviation of returns of 22% and an expected return of 16%. Assume also that the correlation between JCI and PLX is -0.2. Finally, assume that you would like to invest in a portfolio with a standard deviation of returns of 20%.

a. Sketch a graph of the portfolios you can achieve if you buy or short-sell JCI and PLX. Identify your preferred portfolio.
b. Sketch a graph of the portfolios you can achieve if you buy or short-sell JCI, PLX and T-bills. Identify your preferred portfolio. Show also how much better or worse off you are than in part a.
c. Assume that the expected return on both JCI and PLX fall by the same amount and that nothing else changes. Sketch a graph of the portfolios you can now achieve and of your preferred portfolio. Show how much better or worse off you are than in part b.
d. What is the approximate mix of JCI and PLX in part a?
e. What is the approximate mix of JCI, PLX, and Treasuries in part b?
f. How will the mix between PLX and JCI change in part "c" (compared to part "b")?