Scale

71=75
69=74
65=72
62=70
61=68
60=66
59=64
57=63
50=61
46=59
43=58
38=56
37=55
28=54
26=53
16=51

79

Quiz A for 1:15 Class: 7/18/12 Name Key

Answer the following questions on the same graph assuming you can buy or short-sell any of the following assets. Assume also that you wish to earn an expected return of 25% in each of the questions.

Asset	Expected Return	Standard Deviation
Apple	22%	31%
Kellogg	10%	18%
T-bills	3%	0%

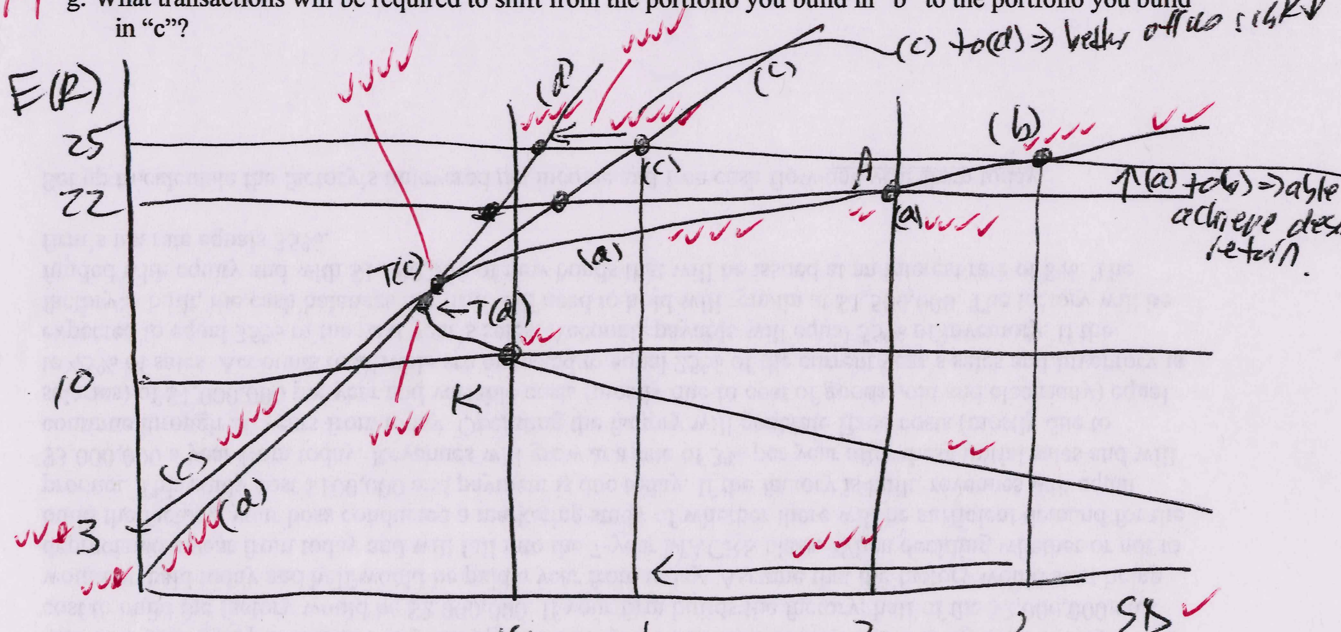
The correlation between Apple and Kellogg is 0.1.

On the graph:

a. If you limit yourself to only buying shares of Apple and Kellogg, show the possible portfolios you could build and identify on your graph your best possible portfolio and the risk of this portfolio.
b. How would your answer in "a" change if you also allow yourself to short-sell Apple or Kellogg? Show on your graph how much better off or worse off you are.
c. How will your investment and risk change if you also allow yourself to buy or short-sell T-bills? Show on your graph how much better off or worse off you are.
d. Show whether you are better off or worse off if the return on T-bills falls before you can set everything up.

Written answer (not on the graph):

e. What transactions will be required to build your portfolio in part "a"?
f. What transactions will be required to shift from the portfolio you build in "a" to the portfolio you build in "b".
g. What transactions will be required to shift from the portfolio you build in "b" to the portfolio you build in "c"?



(b) to (c) better off no risk ↓

e. Invest in Apple ⇒ as close to goal as can get

f. Shortsell Kellogg + invest in Apple (invest wealth + proceeds of shortsale)

g. Sell Apple + buy Kellogg to achieve "T(c)", shortsell Treasuries + invest proceeds ⇒ to adjust return, + initial wealth in T(c).