Finance 5360 Quiz A: 7/31/15   Name ___Key___

Note: Answer the following on a per-share basis.

Assume the following bid and ask prices for Proctor & Gamble stock and on puts and calls on Proctor & Gamble which have a strike price of $75 and which expire 50 days from today. Assume also that the risk-free interest rate equals 1%.

	Bid	Ask
Stock	77.44	77.45
Call	3.25	3.30
Put	0.55	0.60

a. Build a table that shows 1) the set of transactions today that will generate an arbitrage profit for you today, 2) your arbitrage profit today, 3) that 50 days from today, the individual payoffs from the transactions you made today add up to zero if Proctor & Gamble's stock price ends up at $72 per share and 4) that 50 days from today, the individual payoffs from the transactions you made today add up to zero if Proctor & Gamble's stock price ends up at $79 per share.

b. Assume Proctor & Gamble's stock price ends up at $79 per share 50 days from today. For each of the transactions you take today, list the transaction (or transactions) that occurs 50 days from today that generate the cash flows (even zeroes) shown in your table. Be sure to list the specific transaction or transactions (buy, sell, etc.), the price at which each transaction occurs, and the location of each transaction (market, you exercise an option, the buyer of the option exercises their option, etc.). Examples: "Buy ETF in market for $10" or "Exercise option to sell ETF for $10".

$$PV(K) = \frac{75}{(1.01)^{50/365}} = 74.898$$

$$S + P = C + PV(K)$$

✓ Buy: $77.45 + .60 = 78.05 < 78.148 = 3.25 + 74.898$: Sell

✗ Sell: $77.44 + .55 = 77.99 < 78.198 = 3.30 + 74.898$: Buy

$$CF_1$$

Trans	CF_0	72	79	Transactions
+5 Buy stock	−77.45 +3	+72 +3	+79 +3	Sell stock in market +3 for $79
+5 Buy put	−0.60 +3	+3 +3	∅ +3	Put not exercised +3
+5 Sell Call	+3.25 +3	∅ +3	−4 +3 ← ⎰ Buy stock in market for $79 +3 ⎱ Sell stock +3 to call holder for $75
+5 Shortsell Bond	+74.898 +3	−75 +3	−75 +3 ← Buy to cover bond in market for $75 +3
Total	+0.098	∅	∅	
	+4			