Finance 5360 Quiz B: 7/31/15 Name Key

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

Assume the following bid and ask prices for Ford stock and on puts and calls on Ford which have a strike price of $15 and which expire 78 days from today. Assume also that the risk-free interest rate equals 2%.

	Bid	Ask
Stock	15.08	15.09
Call	0.58	0.59
Put	0.50	0.51

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 78 days from today, the individual payoffs from the transactions you made today add up to zero if Ford's stock price ends up at $14 per share and 4) that 78 days from today, the individual payoffs from the transactions you made today add up to zero if Ford's stock price ends up at $17 per share.

b. Assume Ford's stock price ends up at $14 per share 78 days from today. For each of the transactions you take today, list the transaction (or transactions) that occurs 78 days from today that generate each of 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".

$PV(K) = \frac{15}{(1.02)^{78/365}} = 14.9367$

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

X Buy: $15.09 + 0.51 = 15.60 > 15.437 = .58 + 14.937$: sell

✓ Sell: $15.08 + .50 = 15.58 > 15.527 = .59 + 14.937$: Buy

CF_1

Trans	CF_0	14	17	Transaction
+5 Short sell stock	+15.08 +3	−14 +3	−17 +3	Buy to cover stock in market for $14 +3
+5 Sell put	+ 0.50 +3	−1 +3	∅ +3	Buy stock from holder of put for $15 +3
				sell stock in market for $14 +3
+5 Buy call	−0.59 +3	∅ +3	+2 +3	Don't exercise call +3
+5 Buy risk-free bond	−14.936 +3	+15 +3	+15 +3	Bond matures for $15 +3
Total	+0.0533 +4	∅	∅	