

Quiz B for 2:30 Class: 10/30/13

Name Key

Short Answer 1 (15 points): Assume you buy a call with a \$25 strike price. Sketch a graph of the possible payoffs from this long call position at the expiration of the option one month from today. Feel free to put your answer anywhere on this page.

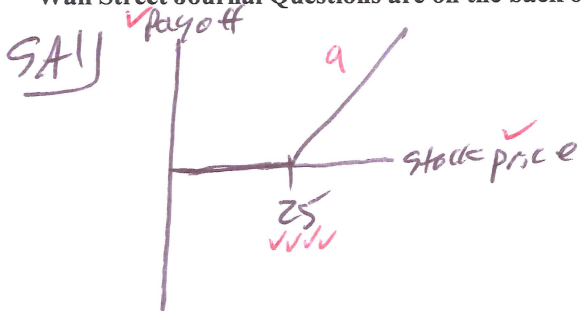
Short Answer 2 (15 points): What transactions or actions would generate each of the individual cash flows in the problem below if Goodyear's stock price ends up at \$25 per share when the options expire? Feel free to list your answers beside the table you (should) create for the problem. Otherwise, be sure to label everything clearly. Be sure to include amounts and locations for transaction.

Problem (75 points): Assume the current prices for Goodyear stock and for options that expire on April 14, 2014 (166 days from today) with a strike price of \$20 are as follows:

	Bid	Ask
Stock	20.62	20.63
Call	2.50	2.55
Put	1.60	1.65

If you assume the risk-free interest rate is 0.1%, what set of transactions today would generate an arbitrage profit today? What are the individual and total cash flows created today and at the expiration of the options if Goodyear's stock price ends up at \$16 or at \$25 per share (when the options expire)? Use a "+" for an inflow and a "-" for an outflow. I will assume an inflow if you do not give a sign. Note: Answer on a per-share basis.

Wall Street Journal Questions are on the back of this page.



$$PV(K) = \frac{20}{(1.001)^{166/365}} = 19.99$$

$STP = C + PV(K)$
 Buy $20.63 + 1.65 = 22.28$ $2.50 + 19.99 = 22.49$ sell ✓
 Sell $20.62 + 1.60 = 22.22$ $2.55 + 19.99 = 22.54$ buy X

Trans	CF ₀	CF ₁		Trans
		16	25	
+5 Buy stock	-20.63	+16	+25	sell stock for \$25 in market
+5 Buy put	-1.65	+4	0	(throw away put)
+5 sell call	+2.50	0	-5	Buy for \$25 in market & sell to holder of call for \$20
+5 short risk-free bond	+19.99	-20	-20	Buy bond for \$20 in market & return to lender
Total	+0.21	0	0	

Note: $v = +1$