Quiz B for 2:30 Class: 04/10/13 Name Key

Assume that Accidental Petroleum's stock price currently equals \$43 per share and that its stock price will rise by \$8 or fall by \$6 each of the next two years. If the risk-free interest rate is 1% per year, what is the value today of a put on Accidental with a strike price of \$50 that expires in two years?

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

0	1	2
$K=50$	$S_u = 51 = 43+8$	$S_{uu} = 59 = 51+8$
$S=43$		$P_{uu} = 0$
		$S_{ud} = S_{du} = 45 = 51-6 = 37+8$
		$P_{ud} = P_{du} = 5 = 50-45$
	$S_d = 37 = 43-6$	$S_{dd} = 31 = 37-6$
		$P_{dd} = 19 = 50-31$

+1 $\Delta_u = \frac{0-5}{59-45} = -0.3571$ 5

+1 $B_u = \frac{5-(-0.3571)(45)}{1.01} = 20.8628$ 5

+1 $P_u = 51(-0.3571) + 20.8628 = 2.6485$ 5

+1 $\Delta_d = \frac{5-19}{45-31} = -1$ 5

+1 $B_d = \frac{19-(-1)(31)}{1.01} = 49.505$ 5

+1 $P_d = 37(-1) + 49.505 = 12.505$ 5

+1 $\Delta = \frac{2.6485 - 12.505}{51-37} = -0.7040$ 9

+1 $B = \frac{12.505 - (-.704)(37)}{1.01} = 38.1724$ 6

+1 $P = 43(-0.704) + 38.1724 = 7.899$ 5