

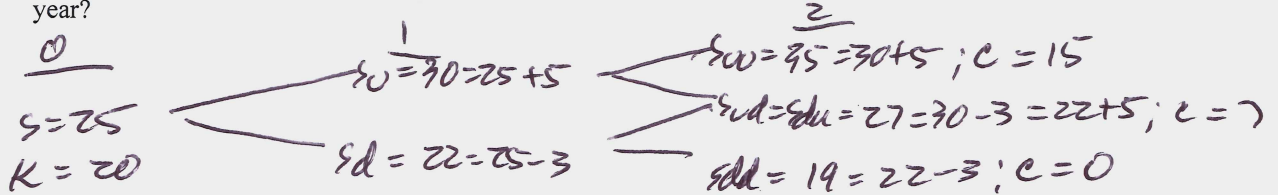
Quiz A for 11:30 Class: 08/06/13

Name Key

Note: Answer everything on a per-share basis.

Assume that Dellay Computers has a current stock price of \$25 per share and its stock price will rise by \$5 or fall by \$3 each of the next two years. You would like to build a portfolio today that is equivalent to a call that expires two years from today with a \$20 strike price. The risk-free interest rate is 2%.

- What portfolio today is equivalent to the call?
- What will it cost today to build this portfolio?
- How will you need to rebalance your portfolio one year from today if Dellay's stock price rises next year?



(18) $\Delta_0 = \frac{15-7}{35-27} = +1$; $B_0 = \frac{7-(1)(27)}{1.02} = -19.6078$
 $C_0 = 30(1) - 19.6078 = 10.3922$

(19) $\Delta_d = \frac{7-0}{27-19} = 0.875$; $B_d = \frac{0-(0.875)(19)}{1.02} = -16.2990$
 $C_d = 22(0.875) - 16.2990 = 2.951$

(18) $\Delta = \frac{10.3922-2.951}{30-22} = 0.9301$; $B = \frac{2.951-(0.9301)(22)}{1.02} = -17.1678$
 $C = 25(0.9301) - 17.1678 = 6.085$

a. Buy 0.9301 shares, short-sell 17.1678 bonds

b. \$6.085

c. change in shares = +0.0699 shares = 1 - 0.9301 \rightarrow buy 0.0699 shares

change in bonds = short-sell \$2.0956 bonds

calculation:

$-0.0699(30)$

or

$-19.6078 - (-17.1678)(1.02)$