QUESTION

Today's date is 16th March 2008. You are interested in investing in a company called Globaldom whose current stock price is \$10. There will be a US presidential election in the first week of November 2008. Depending on who wins, you believe the stock price of Globaldom will rise or fall by approximately 10%. Call or put options are available with expiry dates in June, September and/or December with strike prices of \$9,\$10 and \$11. Assuming your estimates of the likely rise and fall are accurate, construct a portfolio of options which will do well under both outcomes. (Ignore initial costs).

ANSWER

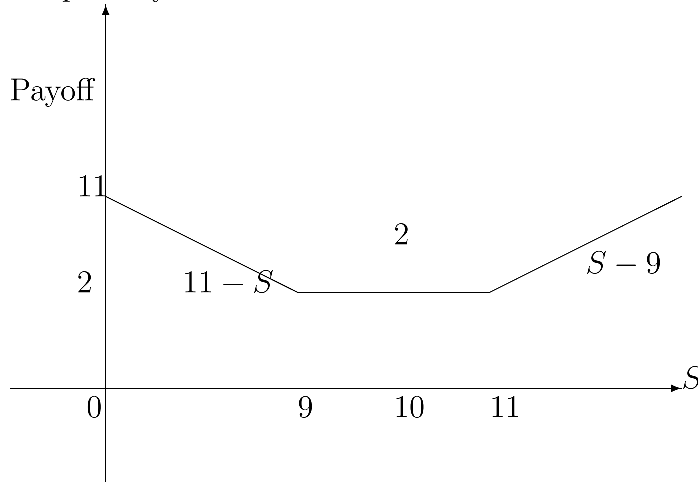
If shares are equally likely to rise or fall, then hold options equally in calls and puts. Try a portfolio with expiry dates in December.

Long one call with strike $k_2 = \$7$

Long one put with strike $k_1 = \$11$

Then payoff is= $\max(11 - S, 0) + \max(S - 9, 0) = \begin{cases} 11 - S & 0 \leq S \leq 9 \\ 2 & 9 \leq S \leq 11 \\ S - 9 & 11 \leq S \end{cases}$

Graphically



Other possibilities exist.