Problem 4

Friday, October 18, 2024 11:19 AM

a) Put call parity,

$$c + Ke^{-rt} = P + S_0$$

$$\Rightarrow \quad C = P + S_0 - Ke^{-rt}$$

Problem 4		
stock Price		100
Risk free rate(continous)		4%
Time to experiation(year)		1
European put option 1		
Strike Price	$	90.00
Premium	$	5.65
European put option 2		
Strike Price	$	110.00
Premium	$	15.25
Call option premium 2	$	9.56
Total Cost for Strangle	$	15.21
Lower Break Even	$	74.79
Upper Break Even	$	125.25

Problem 4	
stock Price	100
Risk free rate(continous)	0.04
Time to experiation(year)	1
European put option 1	
Strike Price	90
Premium	5.65
European put option 2	
Strike Price	110
Premium	15.25
Call option premium 2	=J27+J37-(J36*EXP(-J28*J29))
Total Cost for Strangle	=J33+J39
Lower Break Even	= J32-J42
Upper Break Even	=J36+J37

a) The total cost of setting up the long strangle is $15.21

b) Profit = $Payoff_{put} + Payoff_{call}$ - Total cost

where:

$$Payoff_{put} = \max(K_1 - S_T, 0)$$

$$Payoff_{call} = \max(S_T - K_2, 0)$$

The lower breaking Even point is 74.79 and the upper break even point is 125.25