Baruch CAPS - INTRODUCTION TO DERIVATIVES

Input of Name

Question 1 (35 points)

Calculate the Payoff and Profit/Loss given the information below (3 point each)

Action	Date	Option	Exercise Price	Total Premium (INPUT)	Stock Price	Payoff (1 point)	Profit /Loss (1 point)	BE (Stock) (1 point)	BE (Stock)	HPR % (1 point)
Buy	March	Call	150.00		175.00					
Buy	April	Call	165.00		165.00					
Buy	May	Put	170.00		160.00					
Buy	March	Put	180.00		162.00					
Sell	May	Put	165.00		125.00					
Sell	April	Put	175.00		165.00					
Sell	May	Call	155.00		180.00					
Sell	April	Call	150.00		165.00					
Sell	May	Straddle	175.00		200.00					
Buy	March	Straddle	180.00		185.00					

Question 2 (18 points)

Calculate the Payoff and Profit/Loss given the information below (3 points each):

Action	Date	Option	Exercise Price 1	Exercise Price 2	Net Premium (1 point) (INPUT)	Stock Price	Total Payoff (1 point)	Total Profit (1 point)
Buy	March	Bull Call Spread	150	160		170		
Buy	April	Bull Put Spread	160	165		162		
Buy	May	Bear Put Spread	170	180		150		
Buy	April	Bear Call Spread	160	180		170		
Buy	March	Butterfly Call Spread	150	180		165		
Sell	May	Butterfly Call Spread	170	180		200		

On March 12, 2018 John bought 100 shares of ABC Inc. at $135 expecting to go up soon. Assuming he is right, he wants to protect his investment so that by June 2018 his investment won't go below $13,500 (excluding premium costs). Using the Options Market to protect this floor ($13,500), what will you recommend John do to protect his investment for the next 3 months (June 2018). He does not mind paying for premium if he is fully protecting his investment.

What Strategy to you recommend?

If the stock goes up to $165 and decides to sell, please calculate John's profit and holding period rate of return (HPR) since his purchase including the cost of the option contract he entered.

Profit $ =	
HPR % =	

If the stock goes down to $125 and decides to sell it at that level, please calculate John's profit and holding period rate of return (HPR) since his purchase including the cost of the option contract he entered.

Profit $ =	
HPR % =	

Consider the following binomial option pricing problem involving a Call. This Call has one periods to go before expiring. Its stock price is $45 and its exercise price is $49.50. The risk-free rate is 0.05, the value of u is 1.25 and the value of the d is .95. Construct the 1-period Binomial Tree model and find the value of the call premium using the leverage (6-step, Method 1) and probability method (Method 2)

Create the Tree Sequence calculations (6-step Method 1)

Using the tree above calculate the Call Price using the Probability Method (Method 2) - Show Calculations

Consider the following binomial option pricing problem involving a Put. This Put has two periods to go before expiring. Its stock price is $100 and its exercise price is $110. company expects to pay dividends after the first period. The Dividend yield is 7%, the risk-free rate is 0.05, the value of u is 1.15 and the value of the d is .90. Construct the 2-period Binomial Tree model and find the value of the put premium

Create the Tree Sequence calculations