

MATH 497 - Additional Questions for Homework on Section 5.5.

A. Consider a stock whose current price is 48.00 with the following European call and put option prices with expiry time 1 and strike price given in the chart.

Strike Price	Call Option Price	Put Option Price
40	10.143	0.574
45	6.499	1.735
50	3.805	3.845
55	2.048	6.891
60	1.023	10.671

(i) Determine the intrinsic value of each call and put option at the strike prices shown in the table.

(ii) Determine the time value of each call and put option at the strike prices shown in the table.

B. A. Consider a stock whose current price is 61.00 with the following European call option prices with expiry time in 1 year and strike price given in the chart. The risk-free reference rate is 5% per annum with continuous compounding.

Strike Price	Call Option Price	Put Option Price
55	10.115	
60	6.923	
65	4.488	
70	2.766	
75	1.629	
80	0.921	

(i) Determine the intrinsic value and time value of each call option at the strike prices shown in the table.

(ii) Determine the price of the corresponding put option at the strike prices given in the table.

(iii) Determine the intrinsic value and time value of each put option at the strike prices shown in the table.