

# HOMEWORK 5

## CALL OPTION

A	B	C	D	E	F	G	H	I
5								
6	<b>INPUT</b>			<b>OUTPUT</b>			<b>FORMULAS</b>	
7								
8	Standard Deviation ( $\sigma$ ) =	0.4000	d1 =	-0.065	=	=(LN(D11/D12)+(D10-D13+(D8^2)/2)*D9)/(D8*SQRT(D9))		
9	Expiration (in years) (T) =	0.5000	d2 =	-0.348	=	+G8-D8*SQRT(D9)		
10	Risk-Free Rate (Annual) (i) =	0.0500	N(d1) =	0.474	=	NORMSDIST(G8)		
11	Stock Price (S) =	345.00	N(d2) =	0.364	=	NORMSDIST(G9)		
12	Exercise Price (X) =	375.00						
13	Dividend Yield (annual) ( $\delta$ ) =	0	<b>C =</b>	<b>30.4378</b>	<b>=</b>	<b>+D11*EXP(-D13*D9)*G10-D12*EXP(-D10*D9)*G11</b>		
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## PUT OPTION

A	B	C	D	E	F	G	H	I
18								
19	<b>INPUT</b>			<b>OUTPUT</b>			<b>FORMULAS</b>	
20								
21	Standard Deviation ( $\sigma$ ) =	0.450	d1 =	0.082	=	=(LN(D11/D12)+(D10-D13+(D8^2)/2)*D9)/(D8*SQRT(D9))		
22	Expiration (in years) (T) =	0.500	d2 =	-0.236	=	+G8-D8*SQRT(D9)		
23	Risk-Free Rate (Annual) (i) =	0.035	N(d1) =	0.533	=	NORMSDIST(G8)		
24	Stock Price (S) =	225	N(d2) =	0.407	=	NORMSDIST(G9)		
25	Exercise Price (X) =	230						
26	Dividend Yield (annual) ( $\delta$ ) =	0.040	<b>P =</b>	<b>31.0397</b>	<b>=</b>	<b>D11*EXP(-D9*D8)*(1-G10)-D10*EXP(-D12*D8)*(1-G9)</b>		
27								

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30								
31	<b>INPUT</b>			<b>OUTPUT</b>			<b>FORMULAS</b>	
32								
33	Standard Deviation ( $\sigma$ ) =	0.3500	d1 =	0.055	=	=(LN(D11/D12)+(D10-D13+(D8^2)/2)*D9)/(D8*SQRT(D9))		
34	Expiration (in years) (T) =	0.7500	d2 =	-0.248	=	+G8-D8*SQRT(D9)		
35	Risk-Free Rate (Annual) (i) =	0.0500	N(d1) =	0.522	=	NORMSDIST(G8)		
36	Stock Price (S) =	145.00	N(d2) =	0.402	=	NORMSDIST(G9)		
37	Exercise Price (X) =	155.00						
38	Dividend Yield (annual) ( $\delta$ ) =	0	<b>C =</b>	<b>15.6596</b>	<b>=</b>	<b>+D11*EXP(-D13*D9)*G10-D12*EXP(-D10*D9)*G11</b>		
39								

## PUT OPTION

A	B	C	D	E	F	G	H	I
43								
44	<b>INPUT</b>			<b>OUTPUT</b>			<b>FORMULAS</b>	
45								
46	Standard Deviation ( $\sigma$ ) =	0.350	d1 =	0.055	=	=(LN(D11/D12)+(D10-D13+(D8^2)/2)*D9)/(D8*SQRT(D9))		
47	Expiration (in years) (T) =	0.750	d2 =	-0.248	=	+G8-D8*SQRT(D9)		
48	Risk-Free Rate (Annual) (i) =	0.050	N(d1) =	0.522	=	NORMSDIST(G8)		
49	Stock Price (S) =	145	N(d2) =	0.402	=	NORMSDIST(G9)		
50	Exercise Price (X) =	155						
51	Dividend Yield (annual) ( $\delta$ ) =	0.000	<b>P =</b>	<b>19.9547</b>	<b>=</b>	<b>D11*EXP(-D9*D8)*(1-G10)-D10*EXP(-D12*D8)*(1-G9)</b>		
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