

# LAB REPORT

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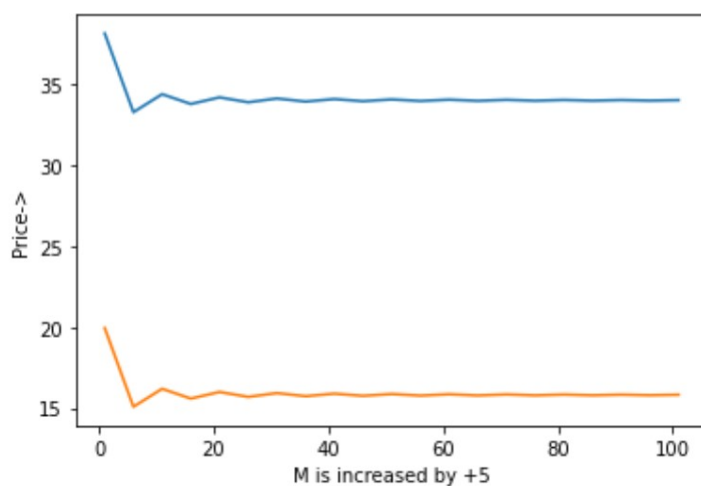
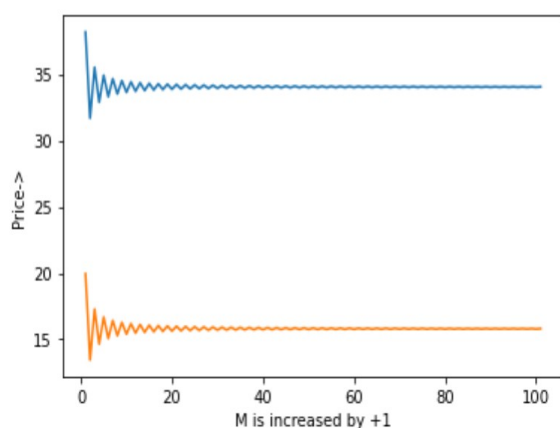
## Question 1:

The initial option prices for varying values of M are tabulated below:

<b>M</b>	<b>Initial Call option price</b>	<b>Initial Put option price</b>
<b>1</b>	38.16763502522771	19.94171724772521
<b>5</b>	34.90653251138065	16.68061473387813
<b>10</b>	33.62502175314767	15.399103975645172
<b>20</b>	33.85944948849383	15.633531710991278
<b>50</b>	33.98118436571939	15.755266588217449
<b>100</b>	34.01116098479097	15.785243207287463
<b>200</b>	34.01957870440791	15.793660926904382
<b>400</b>	34.019131769005824	15.79321399150641

## Question 2:

The following plots were obtained varying M ranging (0-100):



**Question 3:**

The prices at different values of t are tabulated below:

<b>T</b>	<b>ups</b>	<b>downs</b>	<b>Call Price</b>	<b>Put Price</b>
0	0	0	33.85944948849383	15.633531710991278
0.5	0	2	15.09587251387976	24.672817161536067
	1	1	31.89325322224638	15.487143431401382
	2	0	59.95876890092259	8.479204228539844
1	0	4	5.154831129992468	35.96530361639754
	1	3	13.469716242796967	24.98328656939406
	2	2	29.803955121326933	15.26943210857484
	3	1	57.69999468717516	8.00422345974074
	4	0	100.66266571336135	3.5041738979719725
1.5	0	6	1.1250032145209163	48.30495083519326
	1	5	4.121404621027413	36.97007206651646
	2	4	11.767496962598832	25.270959639777367
	3	3	27.57320423638379	14.963371872697078
	4	2	55.29535567856726	7.436262009137822
	5	1	98.43886924880032	2.998249745266072
	6	0	160.61138775301708	0.9424265244113356
3	0	12	0.0	78.22822279375717
	1	11	0.0	72.35769482612885
	2	10	0.0	64.43331094390453
	3	9	0.1183301448516881	53.85484171072243
	4	8	1.2359711338578985	40.5333138464162
	5	7	6.148520463426525	25.955023925263937
	6	6	19.725206220102635	13.221828652306382
	7	5	46.97618778485102	4.958185582926971
	8	4	91.19343329629586	1.235702234238715
	9	3	154.84169905359852	0.17210275688518703
	10	2	242.03018282001358	0.008705281628291726
	11	1	359.93418379078935	0.0
	12	0	519.099688850719	0.0
4.5	0	18	0.0	95.53406311515671
	1	17	0.0	93.12931642139074
	2	16	0.0	89.88324791682146
	3	15	0.0	85.50151375593353
	4	14	0.0	79.58679130640233
	5	13	0.0	71.60275111353512
	6	12	0.0	60.82542413915251
	7	11	0.0	46.2775544006557
	8	10	0.0	26.639984302677387
	9	9	8.149173872616734	8.28121121914694
	10	8	36.25149449124524	0.6015461682626716
	11	7	83.95057683153273	0.0
	12	6	149.14960563525577	0.0
	13	5	237.1590889113628	0.0
	14	4	355.9594650618289	0.0
	15	3	516.3231991518775	0.0
	16	2	732.791598029106	0.0

	17	1	1024.993372815408	0.0
	18	0	1419.4245121000376	0.0