0) Set S=100; r=1%; vol=20%, T=1,K=100

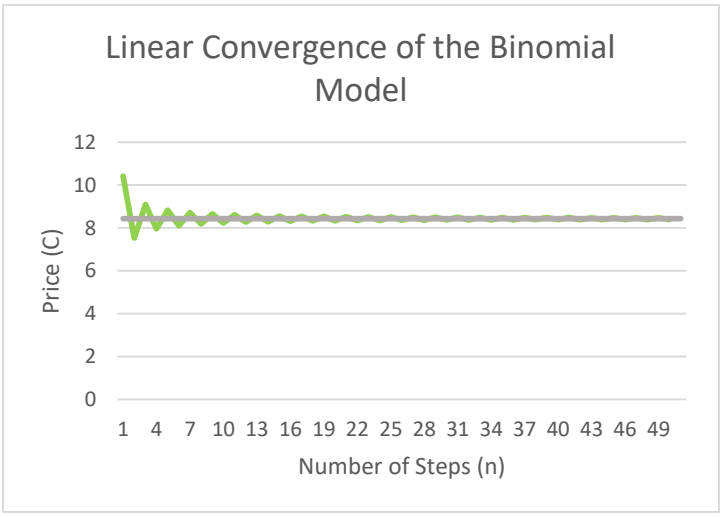
S=	100		Price of the Underlying
r=	1%		Risk free interest rate
\sigma=	20%		Volatility
T=	1	12	Time until maturity (years)
K=	100		Strike Price

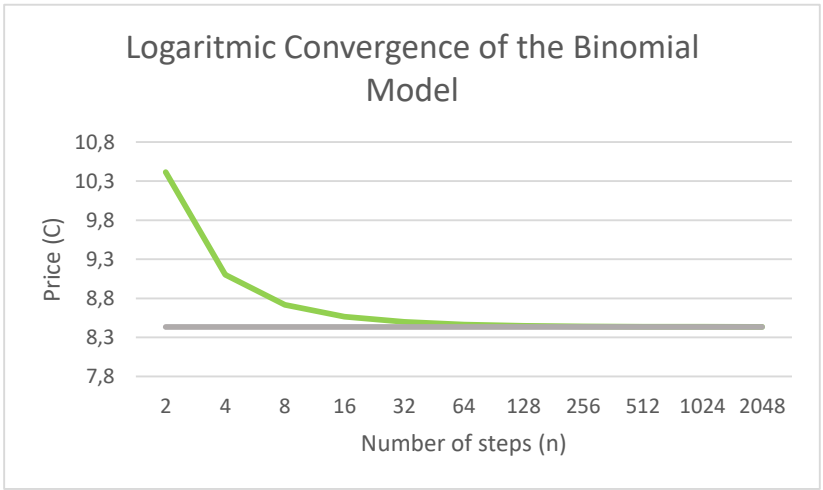
1) Write a VBA script that prices a Call with a binomial model where n (number of steps) is an input parameter

2) Compare with the B&S formula

price (C): 8,433319

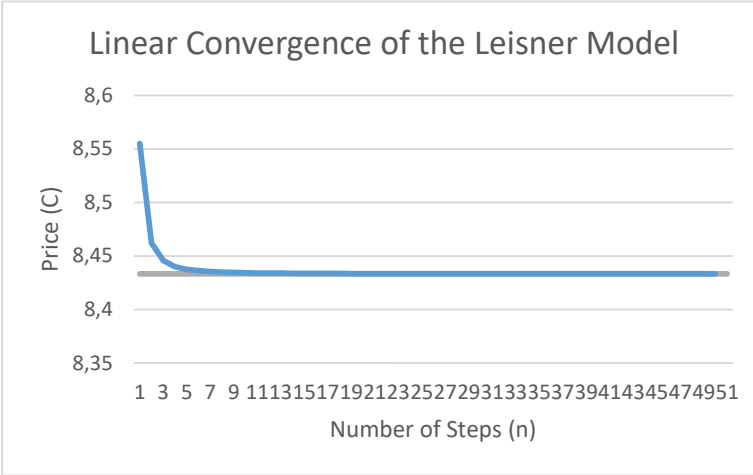
n, steps:	Binomial price:	B_S price:
1	10,41472	8,4333187
3	9,102713	8,4333187
7	8,717473	8,4333187
15	8,565028	8,4333187
31	8,496815	8,4333187
63	8,464504	8,4333187
127	8,448774	8,4333187
255	8,441012	8,4333187
511	8,437157	8,4333187
1023	8,435236	8,4333187
2047	8,434277	8,4333187

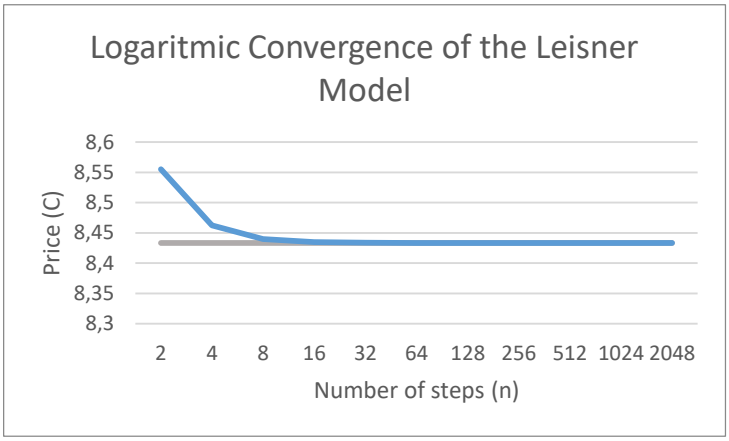


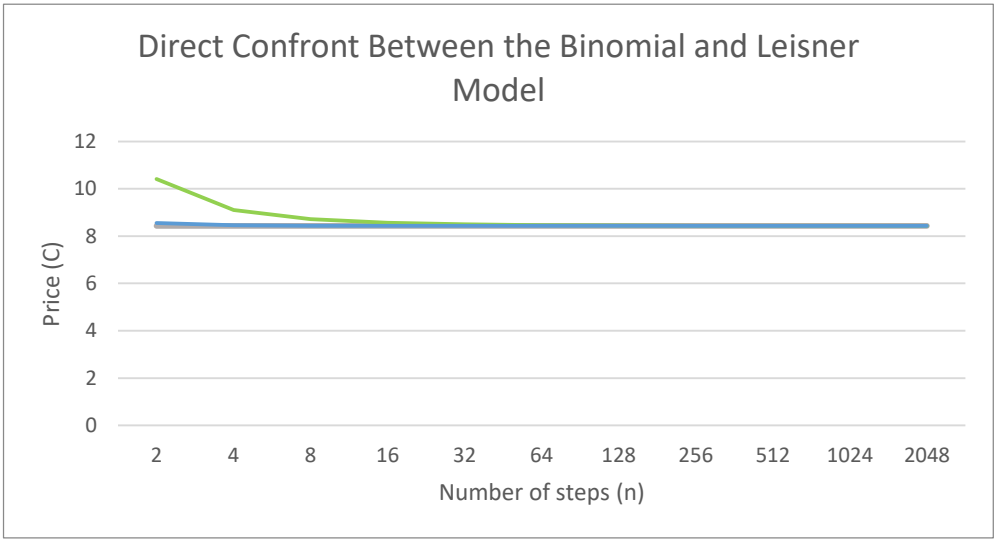


3) Investigate the rate of convergence and compare with the Leisen and Reimer method

n, steps:	Leisner method price:	B_S price:
1	8,555102	8,4333187
3	8,462183	8,4333187
7	8,440006	8,4333187
15	8,434912	8,4333187
31	8,433707	8,4333187
63	8,433414	8,4333187
127	8,433342	8,4333187
255	8,433325	8,4333187
511	8,43332	8,4333187
1023	8,433319	8,4333187
2047	8,433319	8,4333187







S:	K:	r:	sigma:	T:	n:	price (C):	B_S model	n, log:
100	100	1%	20%	12	100	8,413505	8,433319	
100	100	1%	20%	12	1	10,41472	8,433319	
100	100	1%	20%	12	2	7,530459	8,433319	2
100	100	1%	20%	12	3	9,102713	8,433319	4
100	100	1%	20%	12	4	7,957068	8,433319	8
100	100	1%	20%	12	5	8,832691	8,433319	16
100	100	1%	20%	12	6	8,110885	8,433319	32
100	100	1%	20%	12	7	8,717473	8,433319	64
100	100	1%	20%	12	8	8,18978	8,433319	128
100	100	1%	20%	12	9	8,653755	8,433319	256
100	100	1%	20%	12	10	8,237706	8,433319	512
100	100	1%	20%	12	11	8,613347	8,433319	1024
100	100	1%	20%	12	12	8,26989	8,433319	2048
100	100	1%	20%	12	13	8,585447	8,433319	
100	100	1%	20%	12	14	8,292987	8,433319	
100	100	1%	20%	12	15	8,565028	8,433319	
100	100	1%	20%	12	16	8,310368	8,433319	
100	100	1%	20%	12	17	8,54944	8,433319	
100	100	1%	20%	12	18	8,323919	8,433319	
100	100	1%	20%	12	19	8,537149	8,433319	
100	100	1%	20%	12	20	8,334782	8,433319	
100	100	1%	20%	12	21	8,52721	8,433319	
100	100	1%	20%	12	22	8,343682	8,433319	
100	100	1%	20%	12	23	8,519007	8,433319	
100	100	1%	20%	12	24	8,351109	8,433319	
100	100	1%	20%	12	25	8,512122	8,433319	price, log:
100	100	1%	20%	12	26	8,357399	8,433319	
100	100	1%	20%	12	27	8,506261	8,433319	
100	100	1%	20%	12	28	8,362795	8,433319	7,530459
100	100	1%	20%	12	29	8,501211	8,433319	7,957068
100	100	1%	20%	12	30	8,367476	8,433319	8,18978
100	100	1%	20%	12	31	8,496815	8,433319	8,310368
100	100	1%	20%	12	32	8,371573	8,433319	8,371573
100	100	1%	20%	12	33	8,492953	8,433319	8,402382
100	100	1%	20%	12	34	8,375191	8,433319	8,417835
100	100	1%	20%	12	35	8,489535	8,433319	8,425573
100	100	1%	20%	12	36	8,378408	8,433319	8,429445
100	100	1%	20%	12	37	8,486487	8,433319	8,431382
100	100	1%	20%	12	38	8,381288	8,433319	8,43235
100	100	1%	20%	12	39	8,483752	8,433319	
100	100	1%	20%	12	40	8,383881	8,433319	
100	100	1%	20%	12	41	8,481285	8,433319	
100	100	1%	20%	12	42	8,386228	8,433319	
100	100	1%	20%	12	43	8,479048	8,433319	
100	100	1%	20%	12	44	8,388362	8,433319	
100	100	1%	20%	12	45	8,47701	8,433319	
100	100	1%	20%	12	46	8,390311	8,433319	
100	100	1%	20%	12	47	8,475146	8,433319	
100	100	1%	20%	12	48	8,392098	8,433319	
100	100	1%	20%	12	49	8,473435	8,433319	
100	100	1%	20%	12	50	8,393742	8,433319	

S:	K:	r:	sigma:	T:		n:	price (C):	n, log:
100	100	1%	20%	12		100	8,394202	
100	100	1%	20%	12	1	1	8,555102	
100	100	1%	20%	12	3	2	8,462183	2
100	100	1%	20%	12	5	3	8,445551	4
100	100	1%	20%	12	7	4	8,440006	8
100	100	1%	20%	12	9	5	8,43752	16
100	100	1%	20%	12	11	6	8,436199	32
100	100	1%	20%	12	13	7	8,435415	64
100	100	1%	20%	12	15	8	8,434912	128
100	100	1%	20%	12	17	9	8,43457	256
100	100	1%	20%	12	19	10	8,434328	512
100	100	1%	20%	12	21	11	8,434149	1024
100	100	1%	20%	12	23	12	8,434015	2048
100	100	1%	20%	12	25	13	8,43391	
100	100	1%	20%	12	27	14	8,433827	
100	100	1%	20%	12	29	15	8,433761	
100	100	1%	20%	12	31	16	8,433707	
100	100	1%	20%	12	33	17	8,433662	
100	100	1%	20%	12	35	18	8,433624	
100	100	1%	20%	12	37	19	8,433593	
100	100	1%	20%	12	39	20	8,433566	
100	100	1%	20%	12	41	21	8,433542	
100	100	1%	20%	12	43	22	8,433522	
100	100	1%	20%	12	45	23	8,433505	
100	100	1%	20%	12	47	24	8,43349	
100	100	1%	20%	12	49	25	8,433476	Leisner
100	100	1%	20%	12	51	26	8,433464	method:
100	100	1%	20%	12	53	27	8,433453	
100	100	1%	20%	12	55	28	8,433444	6,829771
100	100	1%	20%	12	57	29	8,433435	7,550667
100	100	1%	20%	12	59	30	8,433428	7,969181
100	100	1%	20%	12	61	31	8,433421	8,19499
100	100	1%	20%	12	63	32	8,433414	8,312431
100	100	1%	20%	12	65	33	8,433409	8,372393
100	100	1%	20%	12	67	34	8,433403	8,402718
100	100	1%	20%	12	69	35	8,433399	8,417978
100	100	1%	20%	12	71	36	8,433394	8,425636
100	100	1%	20%	12	73	37	8,43339	8,429474
100	100	1%	20%	12	75	38	8,433386	8,431395
100	100	1%	20%	12	77	39	8,433383	
100	100	1%	20%	12	79	40	8,43338	
100	100	1%	20%	12	81	41	8,433377	
100	100	1%	20%	12	83	42	8,433374	
100	100	1%	20%	12	85	43	8,433371	
100	100	1%	20%	12	87	44	8,433369	
100	100	1%	20%	12	89	45	8,433367	
100	100	1%	20%	12	91	46	8,433365	
100	100	1%	20%	12	93	47	8,433363	
100	100	1%	20%	12	95	48	8,433361	
100	100	1%	20%	12	97	49	8,433359	
100	100	1%	20%	12	99	50	8,433358	