Group C:

b.

In general, the more a greater NT and NSIM would generate more accurate results. But the case does not always hold if we compare, for example, line 6 to line 7 in Batch 1. The greater did not give a more accurate result. Also, the accuracy would reach its peak at some level and decline as the two arguments increase. We can observe this from line 9 in Batch 4, greater arguments lift the absolute error.

Results are as follows:

Batch 1:

	A	B	C	D	E	F	G
1			**Batch 1 Call Option**				
2	**NT**	**NSIM**	**Exact Value**	**Sim Call**	**Abs Error**	**SD**	**SE**
3	100	10,000	2.13337	2.13780	0.00443	4.54234	0.0454234
4	100	100,000	2.13337	2.13043	0.00294	4.51298	0.0142713
5	300	100,000	2.13337	2.16800	0.03463	4.54733	0.0143799
6	300	1,000,000	2.13337	2.13470	0.00133	4.51766	0.0045177
7	500	1,000,000	2.13337	2.13071	0.00266	4.51286	0.0045129
8	500	10,000,000	2.13337	2.13391	0.00054	4.51504	0.0014278
9			**Batch 1 Put Option**				
10	**NT**	**NSIM**	**Exact Value**	**Sim Put**	**Abs Error**	**SD**	**SE**
11	100	10,000	5.84628	5.90807	0.06179	6.05470	0.0605470
12	100	100,000	5.84628	5.87321	0.02693	6.05775	0.0191563
13	300	100,000	5.84628	5.85221	0.00593	6.06286	0.0191724
14	300	1,000,000	5.84628	5.85369	0.00741	6.05714	0.0060571
15	500	1,000,000	5.84628	5.84125	0.00503	6.04743	0.0060474
16	500	10,000,000	5.84628	5.84542	0.00086	6.04884	0.0019128
17							

Batch 2:

	A	B	C	D	E	F	G
1			**Batch 2 Call Option**				
2	**NT**	**NSIM**	**Exact Value**	**Sim Call**	**Abs Error**	**SD**	**SE**
3	100	10,000	7.96557	7.94097	0.0246	13.2120	0.1321200
4	100	100,000	7.96557	7.94362	0.02195	13.1477	0.0415767
5	300	100,000	7.96557	8.05931	0.09374	13.2328	0.0418458
6	300	1,000,000	7.96557	7.97235	0.00678	13.1535	0.0131535
7	500	1,000,000	7.96557	7.96142	0.00415	13.1421	0.0131421
8	500	10,000,000	7.96557	7.96866	0.00309	13.1481	0.0041578
9			**Batch 2 Put Option**				
10	**NT**	**NSIM**	**Exact Value**	**Sim Put**	**Abs Error**	**SD**	**SE**
11	100	10,000	7.96557	8.06336	0.09779	10.43500	0.1043500
12	100	100,000	7.96557	8.00790	0.04233	10.43590	0.0330012
13	300	100,000	7.96557	7.99066	0.02509	10.42920	0.0329801
14	300	1,000,000	7.96557	7.98455	0.01898	10.42290	0.0104229
15	500	1,000,000	7.96557	7.95663	0.00894	10.40520	0.0104052
16	500	10,000,000	7.96557	7.96539	0.00018	10.40710	0.0032910

c:

	A	B	C	D	E	F	G
1		Batch 4 Call Option					
2	**NT**	**NSIM**	**Exact Value**	**Sim Call**	**Abs Error**	**SD**	**SE**
3	100	10,000	92.1757	88.04120	4.1345	254.914	2.549140
4	100	100,000	92.1757	89.42480	2.7509	329.331	1.041440
5	300	100,000	92.1757	91.60760	0.5681	313.347	0.990890
6	500	700,000	92.1757	91.7686	0.4071	375.6	0.448928
7	300	1,000,000	92.1757	91.38560	0.7901	379.548	0.379548
8	500	1,000,000	92.1757	91.84500	0.3307	375.215	0.375215
9	**700**	**1,000,000**	**92.1757**	**92.24050**	**0.0648**	**392.991**	**0.392991**
10	300	5,000,000	92.1757	91.23290	0.9428	366.549	0.163926
11	500	10,000,000	92.1757	91.60580	0.5699	367.038	0.116068
12		Batch 4 Put Option					
13	**NT**	**NSIM**	**Exact Value**	**Sim Put**	**Abs Error**	**SD**	**SE**
14	100	10,000	1.2475	1.32196	0.07446	2.52111	0.0252111
15	100	100,000	1.2475	1.29604	0.04854	2.51105	0.0079406
16	300	100,000	1.2475	1.27204	0.02454	2.47705	0.0078331
17	300	1,000,000	1.2475	1.26564	0.01814	2.47137	0.0024714
18	**500**	**1,000,000**	**1.2475**	**1.25428**	**0.00678**	**2.46068**	**0.0024607**
19	500	10,000,000	1.2475	1.25594	0.00844	2.46148	0.0007784

The program reached two places behind the decimal point at NT of 700 and NSIM of 1,000,000 for the call option. NT of 500 and NSIM of 1,000,000 for put option.

Group D:

b:

The results are the same as we did not change the seed for random function. The SE and SD are listed above. In general, SDs are relatively stable regardless the increase in NT and NSIM. The SEs, on the other hand, are declining as NT goes up.