

# GROUP C&D ANSWERS

## GROUP C

b) Entries below show difference between exact price and MC simulated price.

	<b>1,000</b>	<b>10,000</b>	<b>100,000</b>	<b>500,000</b>	<b>1,000,000</b>
<b>100</b>	0.00223412	0.0617888	0.0269275	-0.00220195	0.00496558
<b>200</b>	0.0468783	0.107535	0.00615011	0.00838219	0.0118842
<b>300</b>	0.143823	0.140681	0.0059304	0.0120152	0.00740591
<b>400</b>	0.316352	0.0871251	-0.0106952	0.0136832	0.000266499
<b>500</b>	0.186697	0.0912569	-0.00810334	0.00864587	-0.00503442

Observations:

- By 100,000 simulations we get close to 2 decimal point accuracy.
- As we increase the number of simulations, the spread becomes tighter. In other words, the column wise standard deviation falls.

c)

Observations:

- To get accuracy beyond 2 decimal places I set NT to 500 and NSIM to 1,000,000
- I observed that with longer time periods, number of subdivisions in time had a stronger effect on accuracy

## GROUP D

b) Standard Error

Observations:

- Increasing subdivisions did not have a very substantial effect on SE, especially compared to the added computational costs
- Increasing NSim led to increased accuracy in the model. As mentioned in my Group C answer, the spread falls a lot, and our computed values are closer to the exact solution on either side.