Exercise F Result

b.

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| --- | --- | --- | --- |
|  | Exact Put Price | MC Put Price | FD Put Price |
| Batch 1 | 5.84584 | 5.84255 | 5.842068 |
| Batch 2 | 7.96632 | 7.95713 | 7.963211 |
| Batch 3 | 4.0733 | 4.06973 | 4.071285 |
| Batch 4 | 1.24651 | 1.24841 | 1.193278 |

For Batch 4, we increased N to 1,000,000 since otherwise Finite Difference Method is not stable and does not converge.

Compare with the Monte-Carlo Method, when T is relatively small, FD method is much faster and accurate than MC Method. When T is large, FD method may not be optimal since we have to increase the mish size to keep it conditionally stable.