

**FINC 623/ECON 623**  
**Homework Assignment—Pricing a Digital Option Two Ways**  
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Maximum team size: 3 persons

Consider the following digital option. The option pays \$1,000 at expiration if the price of stock ABC equals or exceeds \$45.00 on the expiration date. Otherwise the option expires worthless.

**Assume the following input values:**

Current price of ABC	\$42.00
Standard Deviation of ABC	0.23
Days to Expiration	270
Risk-free rate (continuous compounding)	6.00%

**Assignment:**

1. Using the OPTION! Software, determine the value of the option. Capture and present a “screen shot” of the software window showing the correct solution.
2. In EXCEL, create a spreadsheet to price this option with a 10-period lattice. (Start with Pricing a Digital Option Two Ways Excel template on the course web site.) Construct the lattice to work with the provided starting point. (**So your spreadsheet should allow you to change the input values and automatically re-compute the new option values.**) Create two lattices, one for the stock price and a corresponding one for the option valuation. Arrange the two lattices such that the initial stock price occupies cell B21 and the current option price appears in cell B45. (So the lattices should start in those two cells and occupy cells to the right of those points spreading up and down from these two rows. For example, the one period stock prices should be in C20 and C22.)

**Submit on paper:**

1. The screen shot from assignment part #1
2. The following information regarding the spreadsheet lattice.
  - Maximum stock price attainable
  - Minimum stock price attainable
  - Option price
3. A print-out of the stock price lattice
4. A print-out of the option value lattice