The University of Texas at Austin
Homework Assignment 15

M339D Introduction to Financial Mathematics

October 26, 2026

Instructions: Provide your complete solution to the following problems. Final answers only, without appropriate justification, will receive zero points even if correct.

Multiple binomial periods.

Problem 15.1. Consider a non-dividend-paying stock whose current price is \$90 per share. The stock has the volatility equal to 0.20.

Let the continuously compounded, risk-free interest rate be equal to 0.03.

You model the evolution of this stock over the next year with a three-period **forward** binomial tree.

What is the price of a \$95-strike, one-year put on the above stock consistent with this model?

Problem 15.2. Let the be 0.10. Let the initial price of a non-dividend-paying stock be \$100 per share. You use a five-period binomial tree to model the stock price over the next year. Let $u = 1.04$ and $d = 0.96$.

What is the price of a one-year, at-the-money European call option on the above stock?