Problem 5.1. Let the continuously compounded interest rate be $r = 10\%$. Assume that the initial price of a non-dividend-paying stock is $100$ per share.

Consider a 5-period binomial model for the evolution of the stock price over the next year. Let $u = 1.04$ and $d = 0.96$.

(i) What is the price of a one-year, 100-strike cash call on the above asset?
(ii) What is the price of a one-year, at-the-money European call on the above asset?
Problem 5.2. Let the continuously compounded interest rate be $r = 11\%$ per annum. Assume that the initial price of a non-dividend-paying stock is $100$ per share.

Consider an 11-period binomial model for the evolution of the stock price over the next year. Let $u = 1.04$ and $d = 0.96$.

What is the price of a one-year, 130-strike cash call on the above asset?