HW2

MAT 471 E

Due 20.12.2022

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NAME:

QUESTION 1

Consider an American put option and a European put option with strike price $X = 70$ dollars expiring at time 3 on a stock with initial price $S(0) = 70$ dollars in a binomial tree model with $u = \frac{1}{5}$, $d = -\frac{1}{20}$ and $r = \frac{1}{20}$. Use rational numbers for your calculations for the following questions.

a. Find the European put price

b. Find the American put price

c. Compare your observations

QUESTION 2

Compute the expected return and standard deviation of a portfolio consisting of three stocks with weights $w_1 = 40\%$, $w_2 = -10\%$ and $w_3 = 70\%$, given that the stocks have expected returns $\mu_1 = 10\%$, $\mu_2 = 8\%$ and $\mu_3 = 20\%$, standard deviations $\sigma_1 = 1.3$, $\sigma_2 = 0.4$, and $\sigma_3 = 1.7$, and correlations $\rho_{12} = 0.1$, $\rho_{23} = 0.2$, and $\rho_{13} = 0.7$.

QUESTION 3

What is **quantitative behavioral finance**? Explain the **financial overreaction diamonds**.

Notes:

1. Show your work clearly.
2. Do not share your homework. Academic integrity is very important. Plagiarism is not tolerated.