# Quiz 23 for Nov 16

Started: Nov 11 at 8:07pm

# Quiz Instructions

Complete this quiz by 11:00 a.m. on Wednesday November 16.

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## Question 1

1 pts

A stock's rate of return standard deviation is estimated to be $\sigma = 0.35$, and the continuously-compounded riskfree interest rate is $r$ = 3.00%. This information is being used to calibrate the parameters $u$, $d$, and $R_f$ for the binomial model with a period of $\Delta t = 1/12$ (one month). What is the binomial model's risk-neutral probability that the stock returns $u$ over a period, $\hat{\pi}$?

State your answer to 3 decimal places, e.g., 0.512 .

0.4871

## Question 2

1 pts

An American put option has an exercise price of $50 and is written on a stock that is currently worth $S_t$ = $45. Based on the binomial model with a period of $\mathrm{D}t$ =1/52 (one week), the value of the put next period is $P_{t+\mathrm{D}t,u}$ = 3 if the stock

returns $u$ and $P_{t+Dt,d} = 6$ if the stock returns $d$. Furthermore, the risk-neutral probability that the stock returns $u$ equals $\hat{\pi} = 0.5$, and the continuously-compounded riskfree rate equals $r = 4.00\%$. What is the put option's current value, $P_t$ ?

State your answer to 2 decimal places, e.g., 3.76 .

5

## Question 3

1 pts

You calculate a stock's daily returns of $\ln(S_{t+Dt}/S_t)$ for each of 250 trading days over the past year. The sample standard deviation of these daily returns equals 0.02. What is the stock's annualized rate of return standard deviation, $s$ ?

State your answer to 3 decimal places.

0.3162

## Question 4

1 pts

Based on the Black-Scholes-Merton model, the risk-neutral probability that a stock's price will be *less than* the exercise price at the option's maturity equals

- ◉ $N(-d_2)$

- ○ $N(-d_1)$
- ○ $N(d_2)$
- ○ $N(d_1)$

## Question 5

1 pts

Ask one or more questions or make one or more comments regarding the material covered in this class.

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So far, we omly discuss about the BSM model for call option. How about put option? Is it similar to the BSM of call option but reversed in S0 term and X term?

p

33 words

Quiz saved at 12:19am

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