MCQ

Q1: Which of the following is not an OLS assumption?

1. None of these
2. Independent variables have zero covariance
3. Dependent and independent variables have zero covariance
4. Independent variables are not serially correlated

Q2: The daily return volatility of a stock is 0.5%. What is the annual return volatility?

1. 7.93%
2. 2.82%
3. None of these
4. 3.97%

Q3: For an integer dependent variable representing customer satisfaction on a scale of 1 to 10, what estimation methodology should we use?

1. Probit regression
2. Ordered probit regression
3. Multinomial probit regression
4. None of these

Part B: Distributions

B4: A biased coin is flipped 100 times, and the probability of heads each time is p. What is the variance of the total number of heads?

B5: A random variable X follows a uniform distribution between 5 and 10. What is the variance of X?

[Recall that variance of a random variable X is $E(X^2) - (E(x))^2$, and also that we can find E(g(x)) for a variable x with pdf g(x) by integrating f(x)g(x)dx over its domain]

B6: Assume that the defaults in a large bond portfolio follow a Poisson process. Expected number of defaults each year is 10. What is the probability that there are exactly 2 defaults in a year? Over 2 years?

[Recall that P(X=n) for a Poisson distributed variable is $(\lambda^n/n!)e^{-\lambda}$]