Statistics Study Question:

For questions 1-5 use the random variable X with values x = 2, 3, 4, 5 or 6 with P(x) = 0.05x.

1. Determine P (x = 4).

a. 0.05 b. 0.10 c. 0.15 d. 0.20

1. Find P (x ≥ 4).

a. 0.60 b. 0.45 c. 0.75 d. 0.55

1. What is P (2 < x ≤ 5)?

a. 0.70 b. 0.60 c. 0.45 d. 0.35

1. Give E (x).

a. 4.5 b. 4.75 c. 4.25 d. 5

1. Calculate σx.

a. 1.75 b. 2.121 c. 1.323 d. 3.063

For questions 6-10 use a binomial random variable X with n = 5 and p = 0.4.

1. Calculate the probability that x equals three.

a. 0.40 b. 0.913 c. 0.064 d. 0.2304

1. Determine the probability that x is at most two.

a. 0.337 b. 0.6826 c. 0.913 d. 0.317

1. Find the probability that x is at least two.

a. 0.0778 b. 0.663 c. 0.3370 d. 0.6826

1. What is the expected value of x?

a. 2 b. 2.5 c. 1.75 d. 2.25

1. Give the standard deviation of x.

a. 1.44 b. 1.09545 c. 1.2 d. 1

For questions 11-15 use a normal random variable X with mean sixty and standard deviation six.

1. Calculate the Z-score for x = 52.

a. 1.33 b. 0.4082 c. –1.33 d. 0.0918

1. Determine the value of x that is equivalent to a Z-score of 1.96.

a. 71.76 b. 61.96 c. 48.24 d. 76.71

1. Find the probability that x is between forty-five and seventy.

a. 0.9587 b. 0.0062 c. 0.0537 d. 0.9463

1. Give the probability that x is at most 78.5.

a. 0.999 b. 0.4990 c. 3.08 d. 0.001

1. What is the value of x such that P (X < x) is 0.3264?

a. –0.45 b. 57.3 c. 62.7 d. 0.45