Unit 4 - Week 2

Assignment 2

Probability and Statistics

1. A student knows that the probability of selecting a red marble from a bag containing 5 red marbles and 3 blue marbles is 5/8. If she selects 2 marbles without replacement, what is the probability that both marbles are red?

2. If the mean of a dataset is 20 and the standard deviation is 5, what is the Z-score for a value of 25?

3. The probability of having a defective product is 0.2. If a company produces 1000 products, how many defective products can be expected?

4. A fair six-sided die is rolled twice. What is the probability that the sum of the two rolls is 7?

5. The probability of an event A is 0.4 and the probability of an event B is 0.6. If event A and event B are independent, what is the probability of both events occurring?

6. In a binomial distribution, if n = 10 and p = 0.5, what is the expected value?

7. The correlation coefficient between two variables is 0.8. What does this indicate about the relationship between the variables?

8. A survey of 1000 people found that 600 support a new policy. If the margin of error is 3%, what can be said about the confidence interval for the proportion of people who support the policy?

9. A normal distribution has a mean of 50 and a standard deviation of 10. What is the probability of a value being between 40 and 60?

10. In a t-test, if the t-value is 2.5 and the degrees of freedom is 20, what is the p-value?