Q1 Independence
1 Point

Concept Check Note: This concept check is OPTIONAL. You can complete it for extra credit.

Assume you roll two dice and \( D_1 \) is the outcome of the first die, \( D_2 \) is the outcome of the second die and \( S = D_1 + D_2 \). Select all that are true.

- \( P(D_1 = 1, S = 7) = P(D_1 = 1) \cdot P(S = 7) \)
- \( P(D_1 = 6, S = 6) = P(D_1 = 6) \cdot P(S = 6) \)
- Random variables \( D_1 \) and \( D_2 \) are independent
- Random variables \( D_1 \) and \( S \) are independent
- Events \( D_1 = 1 \) and \( S = 7 \) are independent

Q2 Sum of Binomials
1 Point

Let \( X \) and \( Y \) be two independent random variables where \( X \sim \text{Bin}(25, 0.5) \) and \( Y \sim \text{Bin}(50, 0.5) \).

- \( Z \sim \text{Bin}(100, 0.5) \)
- \( Z \sim \text{Bin}(25, 0.5) \)
- \( Z \sim \text{Bin}(75, 0.5) \)

Q3 Sum of Poissons
1 Point

Let \( X \) and \( Y \) be two independent random variables where \( X \sim \text{Poi}(7) \) and \( Y \sim \text{Poi}(3) \).

- \( X + Y \sim \text{Poi}(10) \)
- \( X + Y \sim \text{Poi}(21) \)
- \( X + Y \sim \text{Poi}(4) \)

Q4 Feedback
0 Points

How’s everything going? (This question is optional and not graded.)

Thanks for the feedback!