11/15/2024

ASSIGNMENT

GROUP FIVE

1. **2024/DSC/0091/SS**
2. **2024/DSC/0010/SS**
3. **2024/DSC/0014/SS**
4. **2024/DSC/0090/SS**
5. **2024/DSC/0064/SS**
6. **2024/DSC/007/SS**
7. **2024/DSC/0056/SS**
8. **2024/DSC/0044/SS**
9. **2024/DSC/0084/SS**

**Question 4.**

Part a)

Using A and B

Total number of students = 600

Number of students that got As P (A) =120 /600

Number of students who live on campus P(C) = 200 /600

Number of students that live off campus and got As P (B’ꓵ A) = 80 /600

P (A ꓵB) = P (A) \* P (B)

= 120/600 \* 200/600

= 1/15

*Using contingency table*

P (A) = P (AꓵB) + P (B’ꓵA)

120 ∕600 = P (AꓵB) +80/600

P (AꓵB) = (120/600) – (80/600)

= 1 /15

Therefore, “getting an A” and "living on campus" are independent.

Part b)

Events A and B are independent because the occurrence of one event does not affect the occurrence of the probability of the other event from occurring .

**Question 5**

Part 1)

P(X = 1)

P(X = 1) = [(X=1),(Y=1)] +[(X=1),(Y=2)]

= 0.10 + 0.30

= 0.40

Part 2)

2. P(X = 2\Y =1)

P(X = 2\Y =1) = {(X=2) \* (Y= 1)]/ [(Y=1)}

= {(0.05 +0.25) \* (0.1 + 0.05 + 0.10)] / [(0.1 + 0.05 + 0.10)]

= 0.3

Part 3)

3. P(X = 3 Y =2)

P(X = 3 Y =2) = 0.20

**Question 6**

Bus (B) = [1, 3, 4, 7]

Probability of ¼

Expected distance [E (D)] = Distance covered by the bus [E (B)] + Distance covered by hitching[E(H)]

But,

(B) = [1, 3, 4, 7,]

Estimated distance covered by the bus E (B) = [(1\*1/4) + (3\*1/4) + (4\*1 /4) + (7\*1 /4)]

= ¼ + ¾ + 4/7 +7 /4

= 15/4

From;

Mean = Number of items / total sum

Mean = (1+4)/2

Distance covered by hitching E (H) =5/2

Expected distance he runs each morning E (D) = E (B) + E (H)

= (15/4) + (5/2)

= 6.25 miles