Assignment No: 02

Department of Computer Science

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Probability and Statistics

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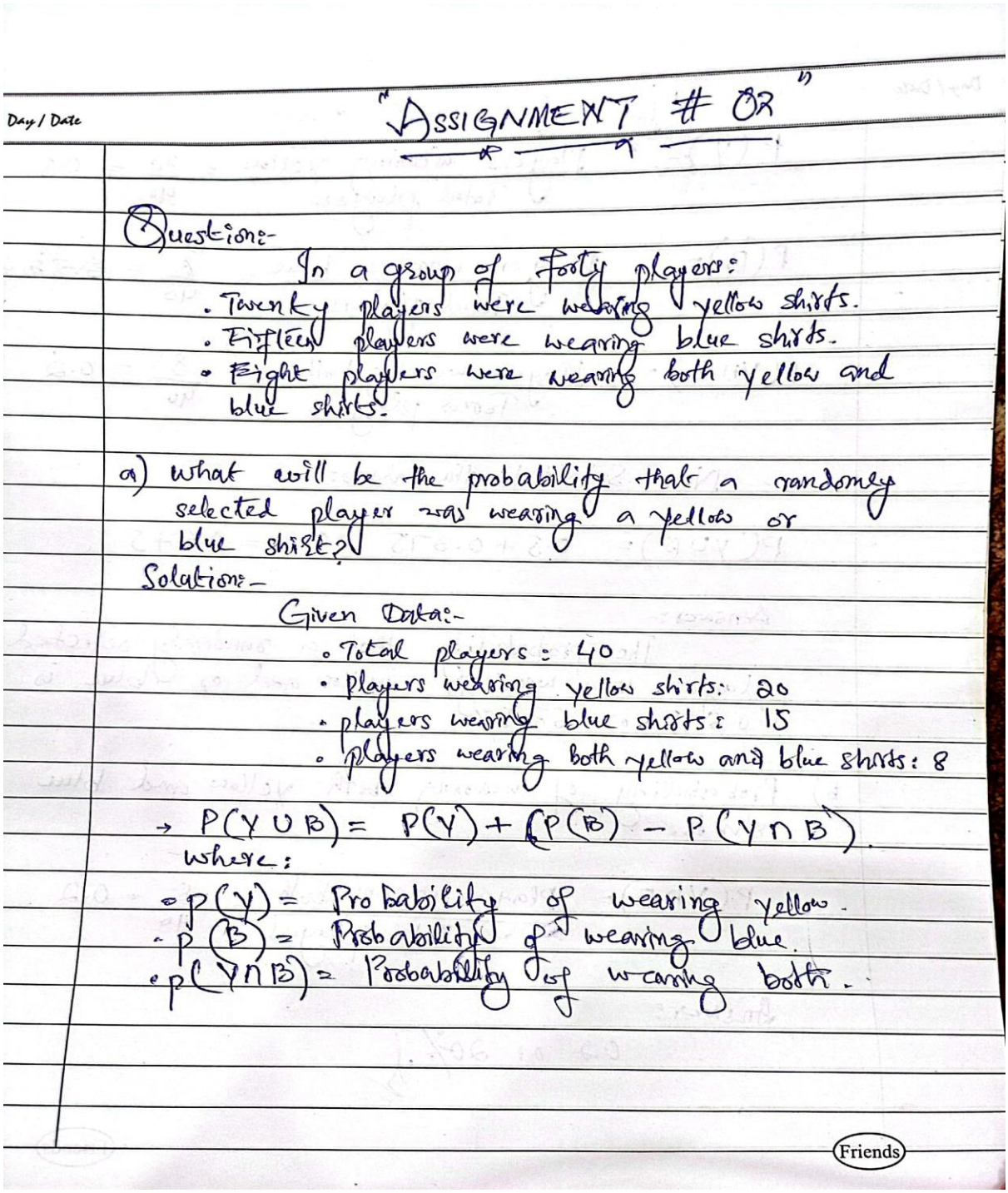
Question: [CLO2]

In a group of forty players, twenty players were wearing yellow shirts, fiftee were wearing blue shirts, and eight players were wearing yellow and blue shirts.

a) What will be the probability that a randomly selected player was wearing yellow or blue shirt?
b) What will be the probability that a randomly selected player was wearing yellow and blue shirt?



Day / Date

"ASSIGNMENT # 02"

Question:-

In a group of forty players:
- Twenty players were wearing yellow shirts.
- Fifteen players were wearing blue shirts.
- Eight players were wearing both yellow and blue shirts.

a) what will be the probability that a randomly selected player was wearing a yellow or blue shirt?

Solution:-

Given Data:-
- Total players : 40
- Players wearing yellow shirts: 20
- players wearing blue shirts : 15
- players wearing both yellow and blue shirts: 8

→ $P(Y \cup B) = P(Y) + P(B) - P(Y \cap B)$

where:
- $P(Y)$ = Probability of wearing yellow.
- $P(B)$ = Probability of wearing blue.
- $P(Y \cap B)$ = Probability of wearing both.

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$P(Y) = \frac{\text{Players wearing yellow}}{\text{Total players}} = \frac{20}{40} = 0.5$

$P(B) = \frac{\text{Players wearing blue}}{\text{Total players}} = \frac{15}{40} = 0.375$

$P(Y \cap B) = \frac{\text{Players wearing both}}{\text{Total players}} = \frac{8}{40} = 0.2$

Now Subsitute the values:

$P(Y \cup B) = 0.5 + 0.375 - 0.2 = 0.675$

Answer:-

The probability that a randomly selected player was wearing a yellow or blue is 0.675 or 67.5%.

b) Probability of wearing both yellow and blue shirts.

$P(Y \cap B) = \frac{\text{Players wearing both}}{\text{Total players}} = \frac{8}{40} = 0.2$

Answer:

0.2 or 20%.

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