

Homework 2

العنوان: دكتور محمود أبوالغيط

العنوان: كلية التربية

التاريخ: ٢٠١٩/٣/٢٥

المستوى: ٠٠٠

الموضوع:

① 12 students

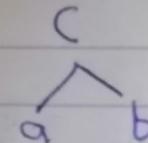
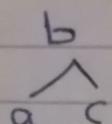
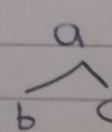
3 different tests

IF 4 students are to take each test

Solution

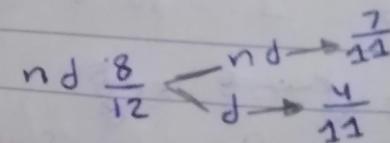
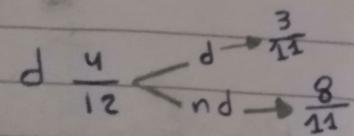
$$12C4 \times 8C4 \times 4C4 = 34,650$$

②



③ defective = d

non-defective = nd



$$\text{i) } P(A) = \frac{4}{12} * \frac{3}{11}$$

$$\text{P(B)} = \frac{8}{12} * \frac{7}{11}$$

$$\text{ii) } \frac{4}{12} * \frac{3}{11} + \frac{4}{12} * \frac{8}{11}$$

$$\textcircled{4} \quad d \frac{5}{15} \xrightarrow{d \rightarrow \frac{10}{14}} nd \xrightarrow{nd \rightarrow \frac{10}{14}}$$

$$nd \frac{10}{15} \xleftarrow{nd \rightarrow \frac{2}{14}} d \xrightarrow{d \rightarrow \frac{5}{14}}$$

$$(i) \frac{10}{14} * \frac{10}{14} * \frac{9}{14} = \frac{225}{686} = 0.33$$

$$(ii) \frac{4}{14}$$

$$(iii) \cancel{\frac{5}{15} * \frac{4}{14}} + \frac{5}{15} * \frac{5}{14} + \cancel{\frac{5}{15} * \frac{4}{14}} = 0.31$$

\textcircled{5} 10 boys 5 mans

20 girls 10 mans

$$P(\text{girls not mans}) = \frac{10}{30} = \frac{1}{3} \quad P(\text{boys}) = \frac{1}{3} \quad P(\text{boys of mansoura}) = \frac{15}{30} = \frac{1}{2}$$

$$\begin{aligned} P(\text{boy or from mansoura}) &= P(\text{boy}) + P(\text{boy from mans}) \\ &\quad - P(\text{girls not mansoura}) \\ &= \frac{1}{3} + \frac{1}{2} - \frac{1}{3} = \frac{1}{2} \end{aligned}$$

الامتحان

الموضوع:

$$\textcircled{6} \quad P(A) = \frac{3}{8} \quad P(B) = \frac{1}{2} \quad P(A \cap B) = \frac{1}{2}$$

$$(i) \quad P(A^c) = 1 - P(A) = 1 - \frac{3}{8} = \frac{5}{8}$$

$$(ii) \quad P(B^c) = 1 - P(B) = 1 - \frac{1}{2} = \frac{1}{2}$$

$$(iii) \quad P(A^c \cap B^c) = 1 - P(A \cup B) = 1 - \frac{1}{2} = \frac{1}{2}$$

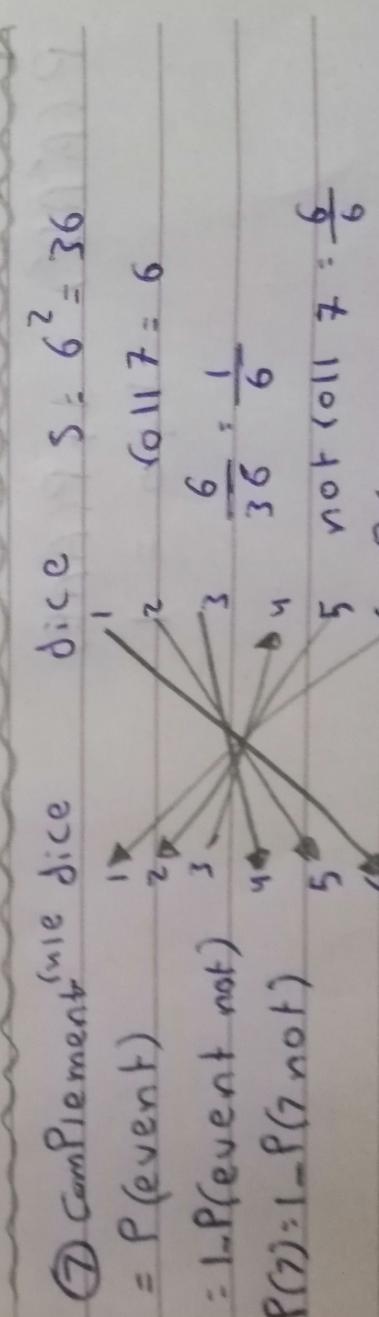
$$\text{(iv)} \quad P(A^c \cup B^c) = 1 - P(A \cup B) = 1 - \frac{3}{8} = \frac{5}{8}$$

$P(A \cup B) = P(A) + P(B) - P(A \cap B)$

$$= \frac{3}{8} + \frac{1}{2} - \frac{1}{2} = \frac{3}{8}$$

$$\text{(v)} \quad P(A \cap B^c) = P(A) - P(A \cap B) = \frac{3}{8} - \frac{1}{2} = \frac{1}{8}$$

$$\text{(vi)} \quad P(B \cap A^c) = P(B) - P(A \cap B) \\ = \frac{1}{2} - \frac{1}{8} = \frac{3}{8}$$



$$6 \quad P(\text{not } 7) = \frac{5}{6} + \frac{5}{6} + \frac{3}{6} = \frac{125}{216}$$
$$P(7) = \frac{1 - 125}{216}$$

التاريخ:

الموضوع:

$$\textcircled{8} \quad \sum P(x) = K^x a - 8$$
$$\sum P(1) = K^1 a - 8$$
$$= t \ 3$$

$$\textcircled{9} \quad P(A) = 0.35 \quad P(B) = 0.45$$

Solution

$$P(A \cup B) = P(A) + P(B) = 0.35 + 0.45 = \frac{4}{5} = 0.8$$

$$P(A \cap B) = P(A) + P(B) - P(A \cup B)$$
$$= 0.35 + 0.45 - 0.8 = 0$$

9

$$P(A' \cap B') = 1 + P(A \cap B)$$
$$= 1 + 0 = 1$$