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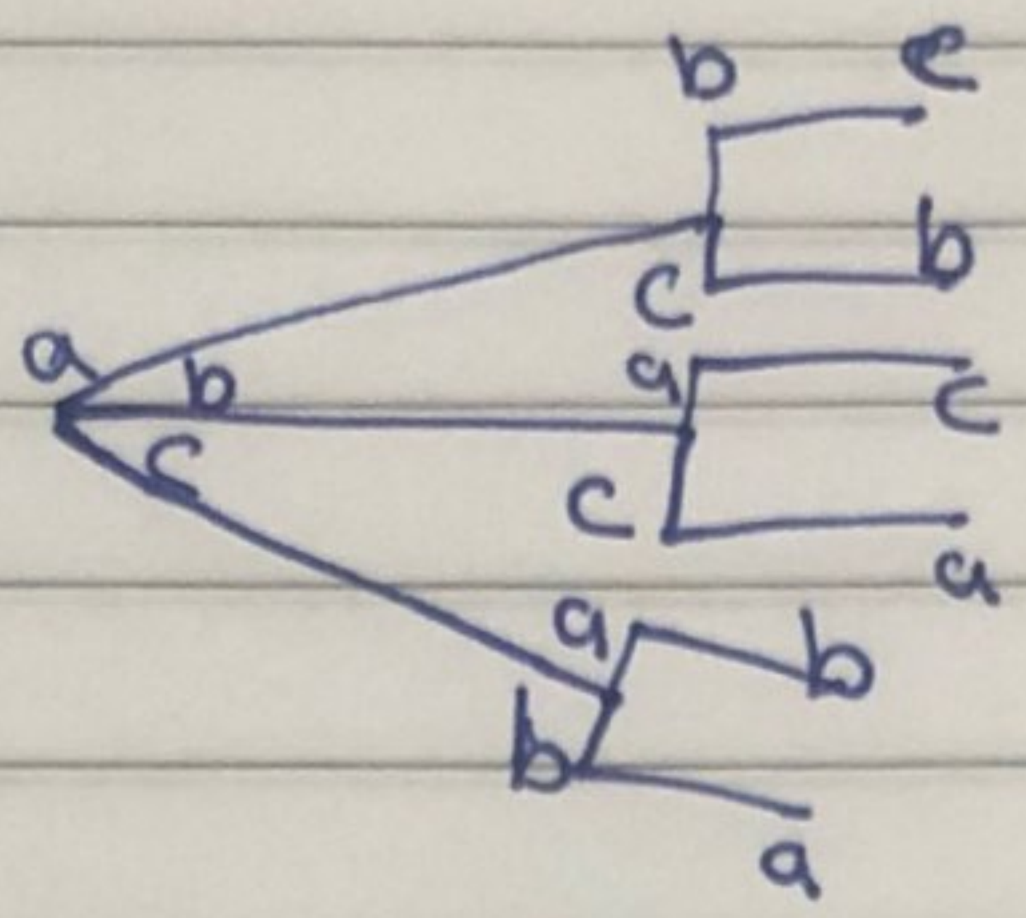
Task 2

1) ${}^{12}C_4 \times {}^{8}C_4 = 34650$

2)



3) ${}^{12}C_2 = 66$ $\quad P(B) = \frac{28}{66} = \frac{14}{33}$

4) 1- ${}^{15}C_3 = 450$, ${}^{10}C_3 = 120$

2- ${}^{5}C_1 \times {}^{10}C_2 = 1250$, $\frac{250}{455} = 0.274$

3- $1 - 0.2637 = 0.7363$

5) $\frac{10}{30} + \frac{5}{30} = \frac{1}{2}$

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

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

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

$P(A^c \cup B^c) = \frac{5}{8} + \frac{1}{2} - \frac{3}{8} = \frac{1}{2}$

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

$P(B \cap A^c) = \frac{1}{2} + \frac{5}{3} - \frac{1}{2} = \frac{5}{8}$

7) 0

8) $\sum P(X) = K^2 - 8$

$K^2 - 8 = 1$

$K^2 = 9$

$K = 3$

9) $1 - (A \cup B) = 1 - 0.8 = 0.2$