

$$7 - (1,6)(6,1)(4,3)(3,4)$$

$$(5,2)(2,5)$$

$$\frac{30}{36} = \frac{5}{6}$$

$$\frac{5}{6} \times \frac{5}{6} \times \frac{5}{6} = 1,978 = \frac{125}{216}$$

$$1 - \frac{125}{216} = \frac{91}{216}$$

$$\textcircled{8} \quad \sum P(x) = k^2 - 8$$

$$k^2 - 8 = 1$$

$$k^2 = 9$$

$$\therefore k = 3$$

$$\textcircled{9} \quad \text{exclusive events} = A \cap B = \text{Zero}$$

$$P(A' \cap B') = (A \cup B)'$$

$$= 1 - (A + B) = 1 - (0.35 + 0.41) = 0.24$$

④ ① $\frac{10C3}{15C3} = \frac{24}{91}$

② $\frac{5C1 \times 5C2}{15C3} = \frac{45}{91}$

③ at least = $1 - \frac{24}{91} = \frac{67}{91}$

⑤ Total number marbles = $10 + 5 = 15$

$\frac{10}{30} + \frac{15}{30} - \frac{5}{30} = \frac{2}{3}$

⑥ $1 - P(A) = 1 - P(A) = 1 - \frac{3}{8} = \frac{5}{8}$

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

3 - $P(A' \text{ intersection } B')$
 $= A' \cap B' = (A \cup B)'$

$1 - \left(\frac{3}{8} + \frac{1}{2} - \frac{1}{2} \right) = \frac{5}{8}$

4 - $(A' \cup B') = 1 - (A \cap B) = 1 - \frac{1}{2} = \frac{1}{2}$

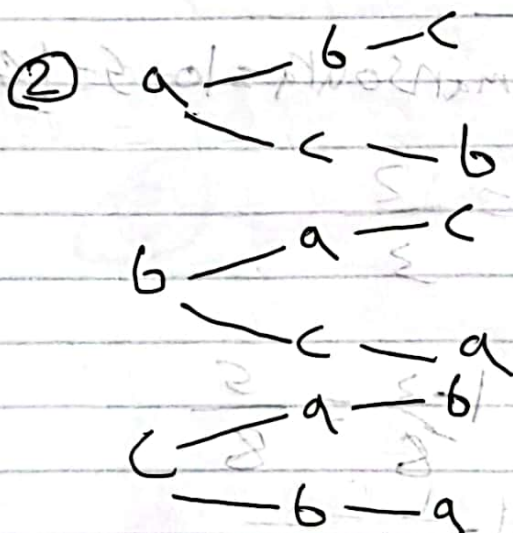
5 - $P(B \cap A') = P(B) - P(A \cap B)$
 $\frac{1}{2} - \frac{1}{2} = \text{Zero}$

Name: Mohamed Ahmed Atta

major: S.W.E

Task 2

① $12C4 \times 8C4 \times 4C4 = 34650$ or $\frac{12!}{4! \times 4! \times 4!}$



③ $P(A) = \frac{4}{12} \times \frac{3}{11} = \frac{1}{11}$

$$P(B) = \frac{8}{12} \times \frac{7}{11} = \frac{14}{33}$$

$P(\text{at least one item is defective})$

$$= 1 - P(B) = 1 - P(\text{both non defective})$$

$$1 - \frac{14}{33} = \frac{19}{33}$$