7- (1,6)(6,1)(4,3)(3,4)
(5,2)(2,5)

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

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

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

(8) $\Sigma P(x) = k^2 - 8$

$k^2 - 8 = 1$

$k^2 = 9$

$\therefore k = 3$

(9) exclusive events = $A \cap B$ = zero

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

$= (A + B) = 1 - (,35 + ,415) = ,2$

(4) ① $\frac{10C_3}{15C_3} = \frac{24}{91}$

② $\frac{5C_1 * 5C_2}{15C_3} = \frac{45}{91}$

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

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(5) Total number mansoura $= 10 + 5 = 15$

$\frac{6}{30} + \frac{15}{30} - \frac{5}{30} = \frac{2}{3}$

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

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

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

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

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Task 2

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

$= 34650$

② a — b — c

c — b

b — a — c

c — a

a — b

c

b — a

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(at least one item is defective)

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

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