S W E

1- $nCr = \frac{n!}{n!(n-r)!}$ $= 495 \times 7 \times 1 = 3465$

2- There are $3 \times 2 \times 1$ PPR mutations of (a, b, c)

3. A: $n = 12C_2 = \frac{12!}{2! \times 10!} = 66$

$P(A) = \frac{6}{66} = \frac{1}{11}$ $P(B) = \frac{28}{66} = \frac{14}{33}$

$\bar{P} = 1 - P(B) = 1 - \frac{14}{33} = \frac{33}{66}$

4. I: $\frac{24}{91}$ II: $\frac{35}{455}$ III: $1 - \frac{120}{455}$

$= \frac{335}{455}$

5. $\frac{1}{3} + \frac{1}{2} - \frac{1}{6} = \frac{5}{6}$

6- $P(A) = \frac{3}{5}$ $P(\bar{A}) = 1 - \frac{3}{5} = \frac{2}{5}$

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

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

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

$= \frac{3}{5} + \frac{1}{2} - \frac{1}{2} = \frac{7}{10}$

$P(\overline{A \cup B}) = 1 - \frac{7}{10} = \frac{1}{10}$ → (3)

$P(A \cap \bar{B}) = 1 - \frac{1}{2} = \frac{1}{2}$ → (4)

$P(\bar{A} \cap B) = \frac{1}{2} - \frac{1}{2} = 0$

(5) = 0

(7) $\frac{5}{6} \times \frac{5}{6} \times \frac{5}{6} = \frac{125}{216}$

(8) $k^2 = 9$ $k = \frac{1}{3}$

(9) $1 - \left(\frac{125}{216}\right) = \frac{91}{216}$