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1. $C(12, 4) = 495$ First

Then, $C(8, 4) = 70$ Third, 1

$= 495 \times 70 \times 1 = 34,650$

2. $a < c - b$

$b < c - a$

$c < a - b$

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

$P(B) = \frac{2}{12} \times \frac{3}{11} = \frac{1}{22}$

② $1 - \frac{1}{11} - \frac{1}{22} = \frac{19}{22}$

Date

$$4-① \frac{1}{15} \times \frac{4}{14} \times \frac{8}{13} = \frac{2}{13}$$

$$② \frac{5}{15} \times \frac{10}{14} \times \frac{9}{13} = \frac{1}{11} \rightarrow \frac{24}{91} =$$

$$③ \frac{7}{11}$$

$$\frac{62}{91}$$

$$5. P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$= \frac{10}{30} + \frac{15}{30} - \frac{1}{30} = \frac{24}{30}$$

$$6. \textcircled{1} P(\bar{A}) = 1 - \frac{3}{8} = \frac{5}{8} \quad \textcircled{2} P(\bar{B}) = 1 - \frac{1}{2} = \frac{1}{2} \quad \textcircled{3} P(\bar{A} \cap \bar{B})$$

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

$$\textcircled{4} P(\bar{A} \cup \bar{B}) = \frac{5}{8} + \frac{1}{2} - \frac{3}{8} = \frac{6}{8}$$

$$\textcircled{5} P(A \cap \bar{B}) = P(A) - P(A \cap B) = \frac{3}{8} - \frac{1}{2} = -\frac{1}{8}$$

$$\textcircled{6} \frac{1}{2} - \frac{1}{2} = \text{zero}$$

7) The probability of not rolling a 7 = $\frac{30}{36}$ or $\frac{5}{6}$

$$P(\text{not rolling a 7 on all three rolls}) = \left(\frac{5}{6}\right)^3 = \frac{125}{216}$$

$$P(\text{rolling a 7 on all three rolls}) = 1 - \frac{125}{216} = \frac{91}{216}$$

$$8) \{P(x) = 1 \quad \therefore 1 = x^2 - 9\}$$

$$\therefore x^2 = 9 \quad x = \pm 3$$

$$9) P(\hat{A} \cap \hat{B}) = P(\overline{A \cup B})$$

\therefore exclusive events

$$\therefore P(A \cup B) = P(A) + P(B) = .35 + .45 = .8$$

$$P(\hat{A} \cap \hat{B}) = 1 - P(A \cup B) = 1 - .8 = .2$$