

$$① 10 \times 9 \times 8 = 720 \quad \text{گزینۀ ۲}$$

$$② \binom{2}{2} + \binom{2}{1} + \dots + \binom{2}{1} = 2^2 - \binom{2}{0} - \binom{2}{2} = 2^2 - 1 - 1 = 2 \quad \text{گزینۀ ۲}$$

$$③ 1 - P(\text{هر دو نرد درخت}) = 1 - \left(\frac{1}{4}\right)^2 = \frac{15}{16} \quad \text{گزینۀ ۱}$$

$$④ \frac{1}{3} \times \frac{9}{11} + \frac{1}{3} \times \frac{3}{8} + \frac{1}{3} \times 1 = \frac{1}{3} + \frac{1}{8} + \frac{1}{3} = \frac{17}{24} \quad \text{گزینۀ ۴}$$

$$⑤ 1 - \frac{12 \times 11 \times 10 \times 9}{12 \times 12 \times 12 \times 12} = 1 - \frac{55}{96} = \frac{41}{96} \quad \text{گزینۀ ۴}$$

$$⑥ \frac{P(A \cup B) + P(A \cap B)}{P(A \cup B) - P(A \cap B)} = \frac{5P(A \cap B)}{P(A \cap B)} = 5 \quad \text{گزینۀ ۲}$$

$$⑦ 1 - P(A \cup B) = 1 - (P(A) + P(B) - P(A \cap B)) \\ = 1 - (1/3 + 1/20 - 1/9) = 1/54 \quad \text{گزینۀ ۳}$$

$$⑧ \text{پایه و ۱۰ صفت} \Rightarrow A = \{ \rightarrow \rightarrow \rightarrow - \rightarrow \rightarrow \rightarrow - \rightarrow \rightarrow \rightarrow \} \Rightarrow \frac{3}{8} \quad \text{گزینۀ ۴}$$

$$⑨ P(B-A) = P(B) - P(A \cap B) = P(B) - P(A) \cdot P(B) \\ = 1/3 - (1/2)(1/3) = 1/6 \quad \text{گزینۀ ۱}$$

$$⑩ P(A \cup B) = P(A) + P(B) - \frac{P(A \cap B)}{P(A) \cdot P(B)} \\ = 1/3 + 1/4 - 1/2 = 1/6 \quad \text{گزینۀ ۴}$$