



MATHS

BOOKS - JEE MAINS PREVIOUS YEAR

PROBABILITY

Others

1. A pair of fair dice is thrown independently three times. The probability of getting a score of exactly 9 twice is (1)

$1/729$ (2)

$8/9$ (3)

$8/729$

(4) $8/243$

A. $8/9$

B. $7/29$

C. $8/243$

D. $1/729$

Answer: null



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2. Two aeroplanes I and II bomb a target in succession. The probabilities of I and II scoring a hit correctly are 0.3 and 0.2, respectively. The second plane will bomb only if the first misses the target. The probability that the target is hit by the second plane is (A) 0.06 (B) 0.14 (C) $\frac{7}{22}$ (D) 0.7



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3. A die is thrown. Let A be the event that the number obtained is greater than 3. Let B be the event that the number obtained is less than 5. Then $P(A \cup B)$ is (1) $\frac{3}{5}$ (2) 0 (3) 1 (4) $\frac{2}{5}$



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4. One ticket is selected at random from 50 tickets numbered 00, 01, 02, ... , 49. Then the probability that the sum of the digits on the

selected ticket is 8, given that the product of these digits is zero, equals (1) $\frac{1}{14}$

(2) $\frac{1}{7}$ (3)

$\frac{5}{14}$

(4) $\frac{1}{50}$



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5. Consider 5 independent Bernoulli's trials each with probability of success p . If the probability of at least one failure is greater than or equal to $\frac{31}{32}$, then p lies in the

interval : (1) $\left(\frac{1}{2}, \frac{3}{4}\right]$ (2) $\left(\frac{3}{4}, \frac{11}{12}\right]$ (3) $\left[0, \frac{1}{2}\right]$
(4) $\left(\frac{11}{12}, 1\right]$



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6. Three numbers are chosen at random without replacement from $\{1, 2, 3, \dots, 8\}$. The probability that their minimum is 3, given that their maximum is 6, is (1) $\frac{3}{8}$ (2) $\frac{1}{5}$ (3) $\frac{1}{4}$ (4) $\frac{2}{5}$



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7. Let A and B be two events such that

$$p(\bar{A} \cup B) = \frac{1}{6}, p(A \cap B) = \frac{1}{4} \quad \text{and}$$

$$p(\bar{A}) = \frac{1}{4} \quad , \quad \text{where } \bar{A} \text{ stands for the}$$

complement of the event A. Then the events A

and B are (1) mutually exclusive and

independent (2) equally likely but not

independent (3) independent but not equally

likely (4) independent and equally likely



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8. Twelve balls are distribute among three boxes. The probability that the first box contains three balls is $\frac{110}{9} \left(\frac{2}{3}\right)^{10}$ b.

$\frac{110}{9} \left(\frac{2}{3}\right)^{10}$ c. $\frac{{}^{(12)}C_3}{12^3} \times 2^9$ d. $\frac{{}^{(12)}C_3}{3^{12}}$



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9. Let two fair six-faced dice A and B be thrown simultaneously. If E_1 is the event that die A shows up four, E_2 is the event that die B shows up two and E_3 is the event that the

sum of numbers on both dice is odd, then which of the following statements is NOT true ? (1) E_1 and E_2 are independent. (2) E_2 and E_3 are independent. (3) E_1 and E_3 are independent. (4) E_1 , E_2 and E_3 are independent.

A. E_2 and E_3 are independent

B. E_1 and E_3 are independent

C. E_1 and E_2 are independent

D. E_1 and E_2 are independent

Answer: null



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10. A box contains 15 green and 10 yellow balls. If 10 balls are randomly drawn, one-by-one, with replacement, then the variance of the number of green balls drawn is: (1) 4 (2)

$\frac{6}{25}$ (3) $\frac{12}{5}$ (4) 6

A. $\frac{6}{25}$

B. $\frac{12}{5}$

C. 6

D. 4

Answer: null



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