

CHAPTER-14 | Probability

QUIZ PART-04

1. A lot of 20 bulbs contains 4 defective bulbs. What is the probability that one bulb drawn at random is defective?

- A. $1/10$ B. $1/5$
C. $4/5$ D. $1/4$ (B)

Explanation: Out of 20 bulbs, 4 are defective. So the probability is $4/20 = 1/5$.

2. A box contains 90 discs numbered from 1 to 90. What is the probability of drawing a two-digit number?

- A. $1/0$ B. $4/5$
C. $9/10$ D. $81/90$ (C)

Explanation: Two-digit numbers from 1 to 90 are 10 to 90, which are 81 numbers. So the probability is $81/90 = 9/10$.

3. A box contains 90 discs numbered from 1 to 90. What is the probability of drawing a perfect square number?

- A. $1/9$ B. $1/10$
C. $9/90$ D. $2/15$ (B)

Explanation: Perfect squares up to 90 are 1, 4, 9, 16, 25, 36, 49, 64, 81. There are 9 such numbers, so the probability is $9/90 = 1/10$.

4. A rectangular region is 3 m by 2 m, and inside it there is a circle of diameter 1 m. What is the probability that a die dropped at random lands inside the circle?

- A. $\pi/24$ B. $\pi/6$
C. $1/6$ D. $\pi/12$ (A)

Explanation: Probability = area of circle \div area of rectangle. Radius = $1/2$ m, so area of circle = $\pi(1/2)^2 = \pi/4$. Area of rectangle = $3 \times 2 = 6$. Therefore, probability = $(\pi/4)/6 = \pi/24$.

5. A lot consists of 144 ball pens, of which 20 are defective. What is the probability that a pen chosen at random is good?

- A. $31/36$ B. $5/36$
C. $20/144$ D. $124/145$ (A)

Explanation: Good pens = $144 - 20 = 124$. So the probability of getting a good pen is $124/144 = 31/36$.

6. Two dice are thrown together. What is the probability that the sum is 7?

- A. $1/6$ B. $5/36$
C. $1/9$ D. $1/12$ (A)

Explanation: Sum 7 can occur in 6 ways: (1,6), (2,5), (3,4), (4,3), (5,2), (6,1). So the probability is $6/36 = 1/6$.

7. A one-rupee coin is tossed 3 times. What is the probability that all tosses give the same result?

- A. $1/8$ B. $1/4$
C. $3/4$ D. $1/2$ (B)

Explanation: Total outcomes are 8. All same result means HHH or TTT, so there are 2 favourable outcomes. Thus, probability = $2/8 = 1/4$.

8. A one-rupee coin is tossed 3 times. What is the probability that Hanif loses the game if he wins only when all tosses are the same?

- A. $1/4$ B. $1/2$
C. $3/4$ D. $7/8$ (C)

Explanation: Hanif wins only in 2 cases: HHH and TTT. So winning probability is $2/8 = 1/4$. Therefore, losing probability = $1 - 1/4 = 3/4$.

9. A die is thrown twice. What is the probability that 5 does not come up either time?

- A. $25/36$ B. $11/36$
C. $5/6$ D. $1/6$ (A)

Explanation: Probability of not getting 5 in one throw is $5/6$. For two independent throws, probability = $(5/6) \times (5/6) = 25/36$.

10. A die is thrown twice. What is the probability that 5 comes up at least once?

- A. $25/36$
B. $11/36$
C. $1/6$
D. $5/36$ (B)

Explanation: Probability of at least one 5 = $1 -$ probability of no 5 in both throws = $1 - 25/36 = 11/36$.