

Q.5. Two dice are thrown simultaneously. Find the probability of getting

- (i) 10 as the sum of two numbers that turn up
- (ii) a doublet of even numbers
- (iii) a total of at least 10
- (iv) a multiple of 3 as the sum of two numbers that turn up

$$(i) P(\text{Sum} = 10) = \frac{3}{36} = \boxed{\frac{1}{12}}$$

$$(ii) P(\text{even doublet}) = \frac{3}{36} = \boxed{\frac{1}{12}}$$

$$(iii) P(\geq 10) = \frac{6}{36} = \boxed{\frac{1}{6}}$$

$$(iv) P(\text{multiple of 3}) = \frac{12}{36} = \boxed{\frac{1}{3}}$$

$6^2 = 36$ outcomes

	1	2	3	4	5	6
1	(1,1)	(1,2)	(1,3)	(1,4)	(1,5)	(1,6)
2	(2,1)	(2,2)	(2,3)	(2,4)	(2,5)	(2,6)
3	(3,1)	(3,2)	(3,3)	(3,4)	(3,5)	(3,6)
4	(4,1)	(4,2)	(4,3)	(4,4)	(4,5)	(4,6)
5	(5,1)	(5,2)	(5,3)	(5,4)	(5,5)	(5,6)
6	(6,1)	(6,2)	(6,3)	(6,4)	(6,5)	(6,6)

Q.8. Cards bearing numbers 2, 4, 6, 8, 10, 12, 14, 16, 18 and 20 are kept in a bag.

A card is drawn at random from the bag. Find the probability of getting a card which is

- (i) a prime number (ii) a number divisible by 4
(iii) a number that is a multiple of 6 (iv) an odd number

$$S = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20\}$$

$$(i) P(\text{prime}) = \frac{1}{10} \quad (ii) P(\div 4) = \frac{5}{10} = \frac{1}{2} \quad (iii) P(\text{multiple of } 6) = \frac{3}{10}$$

$$(iv) P(\text{odd}) = 0$$

Q.9. A box contains 15 balls bearing numbers 1, 2, 3, ..., 14, 15 respectively. A ball is drawn at random from the box. Find the probability that the number on the ball is :

- (i) an even number (ii) a number divisible by 5
(iii) the number 6 (iv) a number lying between 8 and 12

$$S = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15\}$$

$$(i) P(\text{even}) = \frac{7}{15} \quad (ii) P(\div 5) = \frac{3}{15} = \frac{1}{5}$$

$$(iii) P(=6) = \frac{1}{15} \quad (iv) P(8-12) = \frac{3}{15} = \frac{1}{5}$$

Q.10. There are 25 discs numbered 1 to 25. They are put in a closed box and shaken thoroughly. A disc is drawn at random from the box. Find the probability that number on a disc is :

- (i) an odd number
- (ii) divisible by 2 and 3 both.
- (iii) a number less than 16.

$$S = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25\}$$

$$(i) P(\text{odd}) = \frac{13}{25} \quad (ii) P(\div \text{ by } 2 \& 3) = \frac{4}{25}$$

$$(iii) P(< 16) = \frac{15}{25} = \frac{3}{5}$$

Q.11. In a class of 40 students, there are 16 boys and the rest are girls. From these students, one is selected at random. What is the probability that the selected student is a girl?

$$\begin{aligned} \text{Total Strength} &= 40 \\ \text{Boys} &= 16 \\ \text{Girls} &= 24 \end{aligned}$$

$$P(\text{girl}) = \frac{24}{40} = \frac{3}{5}$$