Probability Ex 13.1 Q57

Answer :

Total number of cards = 100 + 200 + 50 = 350

∴ Total number of outcomes = 350

(i) Number of blue cards = 50

So, the number of favourable outcomes are 50.

∴ P(drawing a blue card) = $\frac{\text{Favourable number of outcomes}}{\text{Total number of outcomes}} = \frac{50}{350} = \frac{1}{7}$

(ii) Number of cards which are not yellow = 100 + 50 = 150

So, the number of favourable outcomes are 150.

∴ P(drawing a non yellow card) = $\frac{\text{Favourable number of outcomes}}{\text{Total number of outcomes}} = \frac{150}{350} = \frac{3}{7}$

(iii) Number of cards which are neither yellow nor blue = 100

So, the number of favourable outcomes are 100.

∴ P(drawing a card which is neither yellow nor blue) = $\frac{\text{Favourable number of outcomes}}{\text{Total number of outcomes}} = \frac{100}{350} = \frac{2}{7}$

Probability Ex 13.1 Q58

Answer :

Total number of outcomes = 50

Let E be the event of getting a number which is a multiple of 3 and 4.

Now, the common multiples of 3 and 4 among first 50 natural numbers are 12, 24, 36 and 48.

So, the favourable number of outcomes are 4.

∴ Required probability = P(E) = $\frac{\text{Favourable number of outcomes}}{\text{Total number of outcomes}} = \frac{4}{50} = \frac{2}{25}$

Probability Ex 13.1 Q59

Answer :

The numbers 3, 5, 7, 9, ..., 35, 37 are in AP.

Here, $a = 3$ and $d = 5 - 3 = 2$

Suppose there are n terms in the AP.

$$\therefore a_n = 37$$
$$\Rightarrow 3 + (n-1) \times 2 = 37 \qquad [a_n = a + (n-1)d]$$
$$\Rightarrow 2n + 1 = 37$$
$$\Rightarrow 2n = 37 - 1 = 36$$
$$\Rightarrow n = 18$$

∴ Total number of outcomes = 18

Let E be the event of drawing a card with prime number on it.

Out of the given numbers, the prime numbers are 3, 5, 7, 11, 13, 17, 19, 23, 29, 31 and 37.

So, the favourable number of outcomes are 11.

∴ Required probability = P(E) = $\frac{\text{Favourable number of outcomes}}{\text{Total number of outcomes}} = \frac{11}{18}$

Probability Ex 13.1 Q60

Answer :

Number of persons in the group = 12

∴ Total number of outcomes = 12

(i) Number of persons who are extremely patient = 3

So, the favourable number of outcomes are 3.

∴ P(selecting a person who is extremely patient) = $\frac{\text{Favourable number of outcomes}}{\text{Total number of outcomes}} = \frac{3}{12} = \frac{1}{4}$

(ii) Number of persons who are extremely honest = 6

Number of persons who are extremely kind = 12 − (3 + 6) = 3

∴ Number of persons who are extremely kind or honest = 6 + 3 = 9

So, the favourable number of outcomes are 9.

∴ P(selecting a person who is extremely kind or honest) = $\frac{\text{Favourable number of outcomes}}{\text{Total number of outcomes}} = \frac{9}{12} = \frac{3}{4}$

********** END **********