



TRY YOURSELF

SOLUTIONS

1. Total books in library = 3000 + 4000 = 7000

$$\therefore P(\text{selecting a fiction book}) = \frac{\text{Number of fiction books}}{\text{Total number of books}} = \frac{3000}{7000} = \frac{3}{7}$$

2. Total number of cards = 48

(i) Numbers divisible by 4 are 4, 8, 12, ..., 48

\Rightarrow Number of favourable outcomes = 12

$$\therefore P(\text{number divisible by 4}) = \frac{12}{48} = \frac{1}{4}$$

(ii) Perfect square numbers are 4, 9, 16, 25, 36 and 49.

\Rightarrow Number of favourable outcomes = 6

$$\therefore P(\text{number is perfect square}) = \frac{6}{48} = \frac{1}{8}$$

3. Total number of possible outcomes = 12

(i) Number of favourable outcomes = 3

$$\therefore P(\text{selecting an extremely patient person}) = \frac{3}{12} = \frac{1}{4}$$

(ii) Number of persons who are extremely honest is 6.

$$\therefore \text{Number of persons who are extremely kind} = 12 - (6 + 3) = 3$$

\Rightarrow Number of favourable outcomes = 6 + 3 = 9

$$\therefore P(\text{selecting an extremely kind or honest person}) = \frac{9}{12} = \frac{3}{4}$$

4. Here, total number of possible outcomes = 100

Cube numbers from 1 to 100 are 1, 8, 27, 64.

\Rightarrow Number of favourable outcomes = 4

$$\therefore P(\text{getting a cube number}) = \frac{4}{100} = \frac{1}{25}$$

5. Total number of possible outcomes = 52

There is only 1 card of '6 of spade'.

\Rightarrow Number of favourable outcome = 1

$$\therefore P(\text{getting '6 of spade'}) = \frac{\text{Number of favourable outcomes}}{\text{Total number of possible outcomes}} = \frac{1}{52}$$

6. There are no black diamond cards in playing cards.

\Rightarrow Number of favourable outcomes = 0

$$\therefore P(\text{getting a black diamond card}) = \frac{0}{50} = 0$$

7. Possible outcomes of the experiment are {(1, 1), (1, 2), (1, 3), (1, 4), (1, 5), (1, 6), (2, 1), (2, 2), (2, 3), (2, 4), (2, 5), (2, 6), (3, 1), (3, 2), (3, 3), (3, 4), (3, 5), (3, 6), (4, 1), (4, 2), (4, 3), (4, 4), (4, 5), (4, 6), (5, 1), (5, 2), (5, 3), (5, 4), (5, 5), (5, 6), (6, 1), (6, 2), (6, 3), (6, 4), (6, 5), (6, 6)}

\Rightarrow Total number of outcomes = 36

Outcomes favourable to the event "no prime on both the dice" are {(1, 1), (1, 4), (1, 6), (4, 1), (4, 4), (4, 6), (6, 1), (6, 4), (6, 6)}.

\Rightarrow Number of favourable outcomes = 9

$$\therefore P(\text{getting no prime on both dice}) = \frac{9}{36} = \frac{1}{4}$$

8. There are 52 well shuffled cards.

\Rightarrow Total number of possible outcomes = 52

Also, there are 13 diamond cards.

\Rightarrow Number of favourable outcomes = 13

$$\therefore P(\text{getting diamond card}) = \frac{13}{52} = \frac{1}{4}$$

9. Possible outcomes are {HH, HT, TH, TT}.

\Rightarrow Total number of outcomes = 4

Favourable outcomes are {HT, TH}

\Rightarrow Number of favourable outcomes = 2

$$\therefore \text{Required probability} = \frac{2}{4} = \frac{1}{2}$$

10. When King, Queen, Jack of clubs and diamonds are removed, then total number of outcomes = 52 - 6 = 46

(i) Number of favourable outcomes = 13 + 10 = 23

$$\therefore P(\text{getting a red card}) = \frac{23}{46} = \frac{1}{2}$$

(ii) Number of favourable outcomes = 6

$$\therefore P(\text{getting a face card}) = \frac{6}{46} = \frac{3}{23}$$

(iii) Number of favourable outcomes = 13

$$\therefore P(\text{getting a spade card}) = \frac{13}{46}$$

(iv) Number of favourable outcomes = 2

$$\therefore P(\text{getting a black ace}) = \frac{2}{46} = \frac{1}{23}$$

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

(i) Number of favourable outcomes = 50

$$\therefore P(\text{getting a blue card}) = \frac{50}{350} = \frac{1}{7}$$

(ii) Number of favourable outcomes = 350 - 200 = 150

$$\therefore P(\text{getting not a yellow card}) = \frac{150}{350} = \frac{3}{7}$$

(iii) Number of favourable outcomes = 100

$$\therefore P(\text{getting neither yellow nor a blue card}) = P(\text{getting a red card}) = \frac{100}{350} = \frac{2}{7}$$

