Probability Ex 13.1 Q31

Answer :

GIVEN: The face of red cube and a yellow cube are marked 1 to 6

TO FIND: Probability of getting the same number on both the cubes

Let us first write the all possible events that can occur

(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),

Hence total number of events is $6^2 = 36$

Favorable events i.e. getting the same number on both the dice are

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

Hence total number of favorable events i.e. the same number on both the cube is 6

We know that PROBABILITY = $\dfrac{\text{Number of favourable event}}{\text{Total number of event}}$

Hence probability of getting the same number on both the cube= $\dfrac{6}{36} = \boxed{\dfrac{1}{6}}$

Probability Ex 13.1 Q32

Answer :

GIVEN: A bag contains green, white and yellow marbles.

(i) Probability of selecting green marbles = $\dfrac{1}{4}$

(ii) Probability of selecting white marbles = $\dfrac{1}{3}$

(iii) The jar contains 10 yellow marbles.

TO FIND: Total number of marbles in the same jar

We know that sum of probabilities of all elementary events is 1.

Hence,

$$\text{P(green marble)} + \text{P(white marble)} + \text{P(yellow marble)} = 1$$

$$\frac{1}{4} + \frac{1}{3} + \text{P(yellow marble)} = 1$$

$$\frac{3+4}{12} + \text{P(yellow marble)} = 1$$

$$\frac{7}{12} + \text{P(yellow marble)} = 1$$

$$\text{P(yellow marble)} = 1 - \frac{7}{12}$$

$$\text{P(yellow marble)} = \frac{5}{12}$$

We know that PROBABILITY = $\frac{\text{Number of favourable event}}{\text{Total number of event}}$

Hence

$$\frac{5}{12} = \frac{\text{Number of favourable event ie yellow marble}}{\text{Total number of marble}}$$

$$\frac{5}{12} = \frac{10}{\text{Total number of marbles}}$$

$$\text{Total number of marbles} = \frac{10 \times 12}{5}$$

$$\text{Total number of marbles} = \boxed{24}$$

Probability Ex 13.1 Q33

Answer :

GIVEN: Cards are marked with one of the numbers 1 to 30 are placed in a bag and mixed thoroughly.
One card is picked at random.
TO FIND: Probability of getting a number not divisible by 3 on the picked card.
Total number of cards is 30
Cards marked number not divisible by 3 is 1,2,4,5,7,8,10,11,13,14,16,17,19,20,22,23,25,26,28,29.
Total number of cards marked numbers not divisible by 3 is 20

We know that PROBABILITY = $\frac{\text{Number of favourable event}}{\text{Total number of event}}$

Hence probability of getting a number divisible by 3 on the card = $\frac{20}{30} = \boxed{\frac{2}{3}}$

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