Probability Ex 13.1 Q53

Answer :

Given: King, Queen and Jack of Clubs are removed from a deck of 52 playing cards and the remaining cards are shuffled and a card is drawn at random from the remaining cards

TO FIND: Probability of getting a card

(i) Heart

(ii) Queen

(iii) Clubs

After removing the king, queen and the jack of clubs from the pack of 52 playing cards

Total number of cards left: $52-3=49$

(i) Cards which are heart

Total number of heart cards is $13\times1=13$

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

Hence probability of getting a heart card is equal to $=\boxed{\dfrac{13}{49}}$

(ii) Cards which are queen

Total number of queen cards is $4\times1=4$

From this 4 queen cards one queen of club is taken out.

Hence total number of queen cards left is $4-1=3$

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

Hence probability of getting an queen card $=\boxed{\dfrac{3}{49}}$

(iii) Cards which are clubs

Total number of club cards is $13\times1=13$

The king, queen and jack of clubs are removed

Hence total number of club cards left is $13-3=10$

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

Hence probability of getting a club card is equal to $=\boxed{\dfrac{10}{49}}$

Probability Ex 13.1 Q54

Answer :

GIVEN: Two dice are thrown

TO FIND: Probability of the following:

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 $6^2 = 36$

(i) Favorable events i.e. 5 will not come up on either of them

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

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

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

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

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

Hence total number of favorable events i.e. 5 will not come up on either of them is 25

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

Hence probability that 5 will not come up on either of them is equal to $= \boxed{\frac{25}{36}}$

(ii) Favorable events i.e. 5 will come on at least once

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

Hence total number of favorable events i.e.5 will not come on at least once is 11

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

Hence probability of getting i.e. 5 will come on at least once is equal to $= \boxed{\frac{11}{36}}$

(iii) Favorable events i.e. 5 will come on both side

is (5, 5)

Hence total number of favorable events i.e. 5 will come on both side is 1

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

Hence probability of getting 5 will come on both side is equal to $= \boxed{\frac{1}{36}}$

Probability Ex 13.1 Q55

Answer :

Fill in the blanks:

1. Probability of sure event is 1 as it is certain that it will occur always.
2. Probability of impossible event is 0 as it will never occur.
3. Probability of an event other than sure and impossible event lies between 0 and 1.
4. Every elementary event associated to a random experiment had equal probability
5. Probability of an event A + Probability of event 'not A' = 1.
6. Sum of the probabilities of each outcome in an experiment is 1

Probability Ex 13.1 Q56

Answer :

(i)

Incorrect

When two coins are tossed, the possible outcomes are (H, H), (H, T), (T, H), and (T, T). It can be observed that there can be one of each in two possible ways − (H, T), (T, H).

Therefore, the probability of getting two heads is $\frac{1}{4}$, the probability of getting two tails is $\frac{1}{4}$, and the probability of getting one of each is $\frac{1}{2}$.

It can be observed that for each outcome, the probability is not $\frac{1}{3}$.

(ii)

Correct

When a dice is thrown, the possible outcomes are 1, 2, 3, 4, 5, and 6. Out of these, 1, 3, 5 are odd and 2, 4, 6 are even numbers.

Therefore, the probability of getting an odd number is $\frac{1}{2}$.

Similarly, the probability of getting an even number is $\frac{1}{2}$.

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