



Probability Ex 13.1 Q8

Answer :

GIVEN: A pair of dice is thrown

TO FIND: Probability that the total of numbers on the dice is greater than 10

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 total of numbers on the dice greater than 10

Is (5, 6), (6, 5) and (6, 6)

Hence total number of favorable events i.e. getting the total of numbers on the dice greater than 10 is 3

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

Hence probability of getting the total of numbers on the dice greater than 10 is $\frac{3}{36} = \frac{1}{12}$

Probability Ex 13.1 Q9

Answer :

Given: A card is drawn at random from a pack of 52 cards

TO FIND: Probability of the following

Total number of cards = 52

(i) Cards which are black king is 2

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

Hence probability of getting a black king is equal to $\frac{2}{52} = \frac{1}{26}$

(ii) Total number of black cards is 26

Total numbers of kings are 4 in which 2 black kings are also included

Hence total number of black card or king will be $26 + 2 = 28$

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

Hence probability of getting a black cards or a king = $\frac{28}{52} = \frac{7}{13}$

(iii) Total number of black and a king cards is 2

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

Hence probability of getting a black cards and a king is $\frac{2}{52} = \frac{1}{26}$

(iv) A jack, queen or a king are 3 from each 4 suits

Total number of a jack, queen and king are 12

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

Hence probability of getting a jack, queen or a king is $= \frac{12}{52} = \frac{3}{13}$

(v) Total number of heart cards are 13 and king are 4 in which king of heart is also included.

Total number of cards that are a heart and a king equal to $13 + 3 = 16$

Hence Total number of cards that are neither a heart nor a king $= 52 - 16 = 36$

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

Hence probability of getting cards neither a heart nor a king $= \frac{36}{52} = \frac{9}{13}$

(vi) Total number of spade cards is 13

Total number of aces are 4 in which ace of spade is included in the spade cards.

Hence total number of card which are spade or ace $= 13 + 3 = 16$

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

Hence probability of getting cards that is spade or an ace $= \frac{16}{52} = \frac{4}{13}$

(vii) Total number of ace card are 4 and king are 4

Total number of cards that are a ace and a king is equal to $4 + 4 = 8$

Hence Total number of cards that are neither an ace nor a king is $52 - 8 = 44$

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

Hence probability of getting cards neither an ace nor a king $= \frac{44}{52} = \frac{11}{13}$

(viii) Total number of red cards is 26

Total numbers of queens are 4 in which 2 red queens are also included

Hence total number of red card or queen will be $26 + 2 = 28$

Hence Total number of cards that are neither a red nor a queen $= 52 - 28 = 24$

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

Hence probability of getting neither a red card nor a queen is equal to $\frac{24}{52} = \frac{6}{13}$

(ix) Total number of card other than ace is $52 - 4 = 48$

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

Hence probability of getting other than ace is $\frac{48}{52} = \frac{12}{13}$

(x) Total number of ten is 4

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

Hence probability of getting a ten is $\frac{4}{52} = \frac{1}{13}$

(xi) Total number of spade is 13

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

Hence probability of getting a spade = $\frac{13}{52} = \boxed{\frac{1}{4}}$

(xii) Total number of black cards is 26

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

Hence probability of getting black cards is $\frac{26}{52} = \boxed{\frac{1}{2}}$

(xiii) Total number of 7 of club is 1

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

Hence probability of getting a 7 of club is equal to = $\boxed{\frac{1}{52}}$

(xiv) Total number of jack are 4

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

Hence probability of getting jack $\frac{4}{52} = \boxed{\frac{1}{13}}$

(xv) Total number of ace of spade is 1

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

Hence probability of getting a ace of spade = $\boxed{\frac{1}{52}}$

(xvi) Total number of queen is 4

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

Hence probability of getting a queen $\frac{4}{52} = \boxed{\frac{1}{13}}$

(xvii) Total number of heart cards is 13

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

Hence probability of getting a heart cards = $\frac{13}{52} = \boxed{\frac{1}{4}}$

(xviii) Total number of red cards is 26

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

Hence probability of getting a red cards = $\frac{26}{52} = \boxed{\frac{1}{2}}$

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