Probability

122) Two coins are tossed simultaneously. Find the probability of getting:

(i) At least one head.
(ii) At most two tails.

2014/2016 (4 Marks)

On tossing two coins simultaneously, all possible outcomes are HH, HT, TH, TT.

i.e. Their number=4

(i) Let the event of getting at least one head be E_1.

Then, outcomes favourable to E_1 are HT, TH, HH.

⇒Their number = 3.

So, $P(E_1) = \frac{3}{4}$

(ii)Let the event of getting at most two tails be E_2.

Then, outcomes favourable to E_2 are HH, HT, TH, TT.

⇒ Their number=4

So, $P(E_2) = \frac{4}{4} = 1$

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123) A die is thrown once. Find the probability of getting:

(A) An even number
(B) A number greater than 3
(C) A number between 3 and 6
(D) A prime number

2014/2015 (4 Marks)

When a die is thrown once, the total possible outcomes are 1,2,3,4,5,6.

i.e., Their number=6.

(A) Let the event of getting an even number be E_1. Then, outcomes favourable to E_1. Then, out comes favourable to E_1 are 2,4,6.

⇒Their number =3

So, $P(E_1) = \frac{3}{6} = \frac{1}{2}$.

(B) Let the event of getting a number greater than 3 be E_2, Then, out comes favourable to E_2 are 4,5, 6.
⇒Their number = 3.
So, $P(E2) = \frac{3}{6} = \frac{1}{2}$.

(C) Let the event of getting a number between 3 and 6 be E_3. Then, outcomes favourable to E_3 are 4, 5.

$\Rightarrow$ Their number= 2

So, $P(E_3)=\frac{2}{6}=\frac{1}{3}$.

(D) Let the event of getting a prime number be E_4, Then outcomes favourable to E_4. Then outcomes favourable to E_4 are 2,3,5.
$\Rightarrow$Their number =3.

So, $P(E_4)=\frac{3}{6}=\frac{1}{2}$.

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124) Two digits number are made using the digits 5 and 8 (repetition of digits is allowed).

(A) Write the number.
(B) If a number among them is selected at random, what is the probability that the number will be even?
(C) If a number among them is selected at random, what is the probability that the sum of the digits of the number will be more than 12?
(D) If number among them is selected at random, what is the probability that the sum of the digits of the number will be a multiple of 3?

2012/2015 (4 Marks)

(A) 55, 58, 85, 88

(B) P(number even)$=\frac{2}{4}=\frac{1}{2}$

(C) Number whose sum of digits is more than 12 are 58, 85, and 88.

They are 3 in number.

So, required probability= $\frac{3}{4}$.

(D) In these numbers, no number has the sum of digits as a multiple of 3.

So, required probability $=\frac{0}{4}=0$
