PROBABILITY PROBLEM 1

ai21btech11028

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Problem Statement

Question 1.C of ICSE maths 2014 paper
A die has 6 faces marked by given numbers as shown below

| 1 | 2 | 3 | -1 | -2 | -3 |

The die is thrown once. What is the probability of getting:
(i) a positive integer
(ii) an integer greater than -3
(iii) the smallest integer

1   Given:

A die has six faces marked by the numbers 1,2,3,-1,-2,-3.
The die is thrown once.

2   To Find:

- The probability of getting a positive integer.

- The probability of getting an integer greater than -3.

- The probability of getting the smallest integer.

3   Solution:

3.1   part 1:

Let S be the sample space.
$S = \{1, 2, 3, -1, -2, -3\}$
Thus, $n(S) = 6$
Let E1 be the event of getting positive integer.

$E1 = \{1, 2, 3\}$
Thus, $n(E1) = 3$
Probability $P(E1) = n(E1)/n(S)$
Thus $p(E1) = 3/6$
$= 1/2$
$= 0.5$

3.2   part 2:

Let S be the sample space.
$S = \{1, 2, 3, -1, -2, -3\}$
Thus, $n(S) = 6$
Let E2 be the event of getting an integer greater than -3.
$E2 = \{1, 2, 3, -1, -2\}$
Thus, $n(E2) = 5$
Probability $P(E2) = n(E)/n(S)$
Thus $p(E2) = 5/6$
$= 0.833$

3.3   part 3:

Let S be the sample space.
$S = \{1, 2, 3, -1, -2, -3\}$
Thus, $n(S) = 6$
Let E3 be the event of getting the smallest integer.
$E3 = \{-3\}$
Thus, $n(E3) = 1$
Probability $P(E3) = n(E3)/n(S)$
Thus, $p(E3) = 1/6$
$= 0.166$