

Question:

Two eight-sided number cubes are thrown. Given that one of the cubes shows a three, what is the probability that the sum of the numbers that come up on the two cubes is nine?

Solution:

Lets event A is that sum on two cubes is nine. From question we know that one of the cubes shows a 3, so on the second cube can be only $9 - 3 = 6$ and we can describe event A in other way: event A is that second of the cube shows a six.

Find probability of event A:

$$P(A) = \frac{N(A)}{n}$$

Where

$N(A)$ – the number of ways event a can occur (only 6 number can occur)

n – the total number of possible numbers (This can be one of numbers - 1, 2, 3, 4, 5, 6, 7, 8. Total number is 8)

So $P(A) = \frac{1}{8}$

Answer: $P(A) = \frac{1}{8}$