

Dice Probability of a Prime Number Solution

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If you roll two dice, what is the probability that the sum of the digits will be a prime number?

Solution: Remember, there is always more than one way to solve a problem. For this approach, let's rely on a table that shows all the possible outcomes when rolling two dice. There will be a row and column for each die and the table will show the total values of the two dice.

Die #1 \ Die #2	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

Possible outcomes from rolling Die #1

Possible outcomes from rolling Die #2

All possible outcomes when rolling two dice. If you count them, you have 36 possible outcomes.

The prime numbers have been highlighted yellow.

There are 15 prime outcomes.

Thus, the probability of rolling a prime number is $\frac{15}{36}$

← number of prime outcomes

← total number of outcomes

Since, $\frac{15}{36} = 0.4167 = 41.67\%$,

when rolling two dice, you have a 41.67% chance of rolling a prime number. (when rolling 6-sided dice that is!)