What is the probability of getting at least one head in a series of coin flips?

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The probability of getting at least one head in a series of coin flips is the likelihood of obtaining a result of at least one head in multiple consecutive flips of a coin. This can be calculated by dividing the number of possible outcomes with at least one head by the total number of possible outcomes. It is a fundamental concept in probability theory and is often used in decision making and risk analysis.

Find Probability of At Least One Head in Coin Flips

For any given coin flip, the probability of getting "heads" is 1/2 or 0.5.

To find the probability of at least one head during a certain number of coin flips, you can use the following formula:

P(At least one head) = 1 - 0.5n

where:

n: Total number of flips

For example, suppose we flip a coin 2 times.

The probability of getting at least one head during these 3 flips is:

P(At least one head) = 1 - 0.5nP(At least one head) = 1 - 0.53P(At least one head) = 1 - 0.125P(At least one head)

= 0.875

This answer makes sense if we list out every possible outcome for 2 coin flips with "T" representing tails and "H" representing heads:

TTTTTHTHHTHTHHHHHTHTHHTT

Notice that at least one head (H) appears in 7 out of 8 possible outcomes, which is equal to 7/8 = 0.875.

Or suppose we flip a coin 5 times.

The probability of getting at least one head during these 5 flips is:

P(At least one head) = 1 - 0.5nP(At least one head) = 1 - 0.55P(At least one head) = 1 - 0.25P(At least one head) = 0.96875

The following table shows the probability of getting at least one head during various amounts of coin flips:

Number of Coin Flips	Probability of At Least One Head
1	0.5
2	0.75
3	0.875
4	0.9375
5	0.96875
6	0.984375
7	0.9921875
8	0.99609375
9	0.998046875
10	0.999023438

Notice that the higher number of coin flips, the higher the probability of getting at least one head.

The following tutorials explain how to perform other common calculations related to probabilities: