

How do you calculate probability in Excel?

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April 24, 2024

RECOMMENDED CITATION

stats writer (2024). *How do you calculate probability in Excel?*. PSYCHOLOGICAL SCALES.
Retrieved from <https://scales.arabpsychology.com/?p=138735>

Calculating probability in Excel involves using mathematical functions and formulas to determine the likelihood of an event occurring. This can be done by using the built-in functions such as PROB, NORMDIST, and BINOMDIST, which take into account the number of possible outcomes and the probability of each outcome. Additionally, Excel allows for the use of conditional formatting and data analysis tools to visually represent and analyze the probability data. By inputting relevant data and utilizing the appropriate formulas, Excel can accurately calculate the probability of desired outcomes, making it a valuable tool for statistical analysis and decision-making.

Calculate Probability in Excel (With Examples)

Probability describes the likelihood that some event occurs.

We can calculate probabilities in Excel by using the function, which uses the following syntax:

PROB(x_range, prob_range, lower_limit,)

where:

x_range: The range of numeric x values.
prob_range: The range of probabilities associated with each x value.
lower_limit: The lower limit on the value for which you want a probability.
upper_limit: The upper limit on the value for which you want a probability. Optional.

This tutorial provides several examples of how to use this function in practice.

Example 1: Dice Probabilities

The following image shows the probability of a dice landing on a certain value on a given roll:

	A	B	C	D	E	F	G
1	Value	Probability					
2	1	0.166667					
3	2	0.166667					
4	3	0.166667					
5	4	0.166667					
6	5	0.166667					
7	6	0.166667					
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							

Since the dice is equally likely to land on each value, the probability is the same for each value.

The following image shows how to find the probability that the dice lands on a number between 3 and 6:

	A	B	C	D	E	F	G
1	Value	Probability					
2	1	0.166667		0.5	=PROB(A2:A7, B2:B7, A5, A7)		
3	2	0.166667					
4	3	0.166667					
5	4	0.166667					
6	5	0.166667					
7	6	0.166667					
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							

The probability turns out to be 0.5.

Note that the upper limit argument is optional. So, we could use the following syntax to find the probability that the dice lands on just 4:

	A	B	C	D	E	F	G
1	Value	Probability					
2	1	0.166667		0.166667	=PROB(A2:A7, B2:B7, A5)		
3	2	0.166667					
4	3	0.166667					
5	4	0.166667					
6	5	0.166667					
7	6	0.166667					
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							

The probability turns out to be 0.166667.

Example 2: Sales Probabilities

	A	B	C	D	E
1	Sales	Probability			
2	1	0.1			
3	2	0.2			
4	3	0.4			
5	4	0.3			
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

The following image shows how to find the probability that the company makes either 3 or 4 sales:

	A	B	C	D	E	F	G
1	Sales	Probability					
2	1	0.1		0.7	=PROB(A2:A5, B2:B5, A4, A5)		
3	2	0.2					
4	3	0.4					
5	4	0.3					
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							

The probability turns out to be 0.7.