

How can I calculate point estimates in Excel? Can you provide some examples?

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To calculate point estimates in Excel, you can use the "AVERAGE" function or the "SUM" function with the "COUNT" function to find the average or sum of a set of data points. This will give you a single value that represents the central tendency of the data. For example, if you have a set of numbers representing the sales of a product in a month, you can use the "AVERAGE" function to find the average sales and get a point estimate for the overall sales in that month. Similarly, you can use the "SUM" function with the "COUNT" function to find the total sales and get a point estimate for the overall revenue generated. These functions can also be used for other types of data, such as measurements or survey responses, to calculate point estimates in Excel.

Calculate Point Estimates in Excel (With Examples)

A represents a number that we calculate from sample data to estimate some population parameter. This serves as our best possible estimate of what the true population parameter may be.

The following table shows the point estimate that we use to estimate population parameters:

Measurement	Population parameter	Point estimate
Mean	μ (population mean)	$\bar{x}$ (sample mean)
Proportion	π (population proportion)	p (sample proportion)

Although a point estimate represents our best guess of a population parameter, it's not guaranteed to exactly match the true population parameter.

For this reason, we often calculate confidence intervals as well - intervals that are likely to contain a population parameter with a certain level of confidence.

The following examples explain how to calculate point estimates and confidence intervals in Excel.

Example 1: Point Estimate for a Population Mean

Suppose we're interested in calculating the mean weight of a population of turtles. To do so, we collect a random sample of 20 turtles:

	A	B	C	D	E	F	G	H
1	Weights							
2	298							
3	300							
4	304							
5	308							
6	312							
7	291							
8	284							
9	299							
10	314							
11	304							
12	300							
13	301							
14	309							
15	302							
16	295							
17	297							
18	303							
19	304							
20	290							
21	291							
22								
23								
24								

Our point estimate for the population mean is simply the sample mean, which turns out to be 300.3 pounds:

	A	B	C	D	E	F	G
1	Weights		Sample Mean	300.3	=AVERAGE(A2:A21)		
2	298						
3	300						
4	304						
5	308						
6	312						
7	291						
8	284						
9	299						
10	314						
11	304						
12	300						
13	301						
14	309						
15	302						
16	295						
17	297						
18	303						
19	304						
20	290						
21	291						
22							
23							
24							
25							

We can then use the following formula to calculate a 95% confidence interval for the population mean:

	A	B	C	D	E	F
1	Weights		Sample Mean	300.3	=AVERAGE(A2:A21)	
2	298		Sample Std. Dev.	7.616	=STDEV.S(A2:A21)	
3	300		Sample Size	20	=COUNT(A2:A21)	
4	304					
5	308					
6	312					
7	291					
8	284		95% Upper CI	303.638	=D1+NORM.S.INV(0.975)*(\$D\$2/SQRT(\$D\$3))	
9	299		95% Lower CI	296.962	=D1-NORM.S.INV(0.975)*(\$D\$2/SQRT(\$D\$3))	
10	314					
11	304					
12	300					
13	301					
14	309					
15	302					
16	295					
17	297					
18	303					
19	304					
20	290					
21	291					
22						
23						
24						
25						

We are 95% confident that the true mean weight of turtles in this population is in the range .

We can confirm these results by using the .

Example 2: Point Estimate for a Population Proportion

Suppose we're interested in calculating the proportion of turtles in a population that have spots on their shell. To do so, we collect a random sample of 20 turtles and find that 13 have spots.

	A	B	C	D	E	F
1	Sample Size	20		Sample Proportion	0.65	=B2/B1
2	# Turtles with Spots	13				
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						

We can then use the following formula to calculate a 95% confidence interval for the population proportion:

	A	B	C	D	E	F	G	H	I	J
1	Sample Size	20		Sample Proportion	0.65	=B2/B1				
2	# Turtles with Spots	13								
3				95% Upper CI	0.859	=E\$1+NORM.S.INV(0.975)*SQRT(E\$1*(1-E\$1)/B\$1)				
4				95% Lower CI	0.441	=E\$1-NORM.S.INV(0.975)*SQRT(E\$1*(1-E\$1)/B\$1)				
5										
6										
7										
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20										

We are 95% confident that the true proportion of turtles in this population that have spots is in the range .

We can confirm these results by using the .