How do you calculate deciles in Google Sheets and what are some examples?

Authored by

stats writer

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Deciles are a statistical measure that divides a data set into ten equal parts, with each part representing 10% of the data. In Google Sheets, deciles can be calculated by using the QUARTILE function, which returns the value at a given percentile in a data set. For example, to find the first decile (representing the 10th percentile) in a data set, the formula would be =QUARTILE(data, 0.1). This would return the value that is greater than 10% of the data points and less than the remaining 90%. Similarly, to find the fifth decile (representing the 50th percentile or median), the formula would be =QUARTILE(data, 0.5). Deciles can be useful in analyzing data sets with a large range of values, as they provide a way to compare different parts of the data set.

Calculate Deciles in Google Sheets (With Examples)

In statistics, deciles are numbers that split a dataset into ten groups of equal frequency.

The first decile is the point where 10% of all data values lie below it.

The second decile is the point where 20% of all data values lie below it.

The third decile is the point where 30% of all data values lie below it.

And so on.

We can use the following function to calculate the deciles for a dataset in Google Sheets:

=PERCENTILE(CELL RANGE, PERCENTILE)

For example, we would use the following formula to calculate the value of the third decile for a dataset in the range A1:A50:

=PERCENTILE(A1:A50, 0.3)

The following example shows how to use this function in practice.

Example: Calculate Deciles in Google Sheets

Suppose we have the following dataset with 20 values:

	A	B	C	D
1	**Data Value**			
2	56			
3	58			
4	64			
5	67			
6	68			
7	73			
8	78			
9	83			
10	84			
11	88			
12	89			
13	90			
14	91			
15	92			
16	93			
17	93			
18	94			
19	95			
20	97			
21	99			
22				

The following image shows how to calculate the deciles for the dataset:

D2 fx =PERCENTILE($A$2:$A$21, C2/10)

	A	B	C	D	E
1	**Data Value**		**Decile**	**Value**	
2	56		1	63.4	
3	58		2	67.8	
4	64		3	76.5	
5	67		4	83.6	
6	68		5	88.5	
7	73		6	90.4	
8	78		7	92.3	
9	83		8	93.2	
10	84		9	95.2	
11	88				
12	89				
13	90				
14	91				
15	92				
16	93				
17	93				
18	94				
19	95				
20	97				
21	99				
22					
23					

Here is how to interpret each decile value:

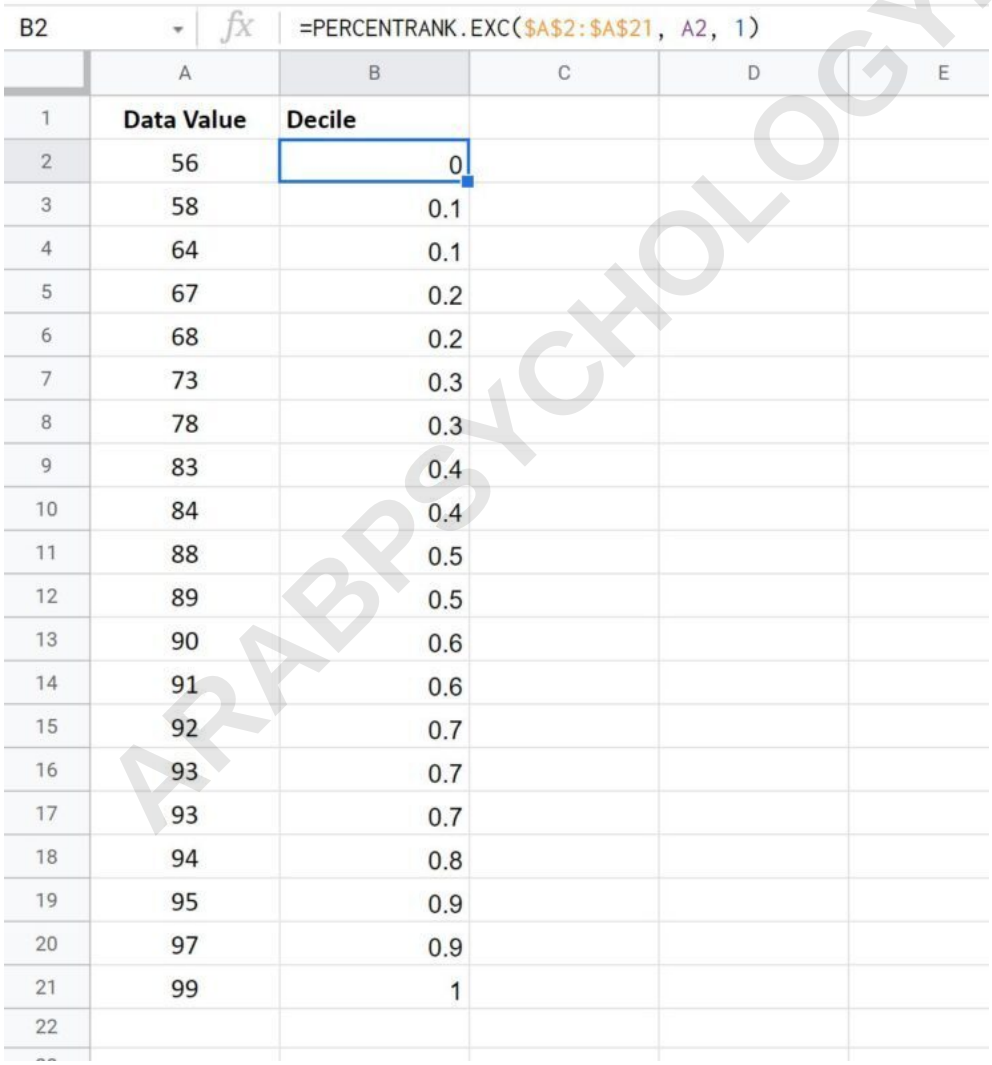
10% of all data values lie below 63.4.20% of all data values lie below 67.8.30% of all data values lie below 76.5.

To place each data value into a decile, we can use the PERCENTRANK.EXC() function, which uses the

following syntax:

=PERCENTRANK.EXC(CELL RANGE, DATA VALUE, SIGNIFICANCE)

The following image shows how to use this function for our dataset:



B2 =PERCENTRANK.EXC($A$2:$A$21, A2, 1)

	A	B	C	D	E
1	Data Value	Decile			
2	56	0			
3	58	0.1			
4	64	0.1			
5	67	0.2			
6	68	0.2			
7	73	0.3			
8	78	0.3			
9	83	0.4			
10	84	0.4			
11	88	0.5			
12	89	0.5			
13	90	0.6			
14	91	0.6			
15	92	0.7			
16	93	0.7			
17	93	0.7			
18	94	0.8			
19	95	0.9			
20	97	0.9			
21	99	1			
22					

Note that this function finds the relative rank of a value

in a dataset as a percentage and rounds to one digit, which is equivalent to finding the decile that the value falls in.

The way to interpret the output is as follows:

The data value 58 falls between the percentile 0 and 0.1, thus it falls in the first decile.The data value 64 falls between the percentile 0.1 and 0.2, thus it falls in the second decile.The data value 67 falls between the percentile 0.1 and 0.2, thus it falls in the second decile.The data value 68 falls between the percentile 0.2 and 0.3, thus it falls in the third decile.

And so on.

Additional Resources

The following tutorials explain how to perform other common tasks in Google Sheets: