

How do you calculate deciles in Excel and what are some examples of their use?

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Deciles are statistical measures used to divide a set of data into ten equal parts, with each part representing 10% of the total data. In Excel, deciles can be calculated using the DECILE function, which takes two arguments: the data range and the decile number (ranging from 0 to 10). The resulting value represents the point at which the specified percentage of data falls below.

Deciles are commonly used in data analysis to identify patterns and trends, as well as to compare the distribution of data across different groups. For example, a company may use deciles to analyze sales data and identify the top 10% of highest-selling products, or to compare the income distribution of employees across different departments. Deciles can also be useful in identifying outliers or extreme values in a dataset.

Calculate Deciles in Excel (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, and so forth.

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

=PERCENTILE(CELL RANGE, PERCENTILE)

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

Example: Calculate Deciles in Excel

Suppose we have the following dataset with 20 values:

	A	B	C	D	E	F	G
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							
23							
24							
25							
26							
27							
28							
29							

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

	A	B	C	D	E	F	G
1	Data Value			Decile	Value		
2	56			1	=PERCENTILE(\$A\$2:\$A\$21, D2/10)		
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							
24							
25							
26							
27							

The way to interpret the deciles is as follows:

20% of all data values lie below 67.8.

30% of all data values lie below 76.5.

40% of all data values lie below 83.6.

And so on.

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:

	A	B	C	D	E	F
1	Data Value	Decile		Decile	Value	
2	56	=PERCENTRANK.EXC(\$A\$2:\$A\$21,A2,1)				
3	58	0		2	67.8	
4	64	0.1		3	76.5	
5	67	0.1		4	83.6	
6	68	0.2		5	88.5	
7	73	0.2		6	90.4	
8	78	0.3		7	92.3	
9	83	0.3		8	93.2	
10	84	0.4		9	95.2	
11	88	0.4				
12	89	0.5				
13	90	0.5				
14	91	0.6				
15	92	0.6				
16	93	0.7				
17	93	0.7				
18	94	0.8				
19	95	0.8				
20	97	0.9				
21	99	0.9				
22						
23						
24						
25						
26						

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.

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