How do I calculate the 90th percentile in Excel?

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Calculating the 90th percentile in Excel allows you to find the value that is greater than 90% of the data points in a given set. To do this, you can use the PERCENTILE function which takes two arguments: the data set and the desired percentile (in this case, 90%). This function will return the value that corresponds to the 90th percentile. Simply input the data set into the function and adjust the desired percentile as needed to accurately calculate the 90th percentile in Excel.

Calculate the 90th Percentile in Excel

The 90th percentile of a dataset is the value that cuts off the bottom 90 percent of the data values from the top 10 percent of data values when all of the values are sorted from least to greatest.

To find the 90th percentile of a dataset in Excel, you can use one of the following two functions:

=PERCENTILE(array, k)=PERCENTILE.INC(array, k)

Both functions will return the same value. For both functions, the array is the list of values in your dataset and k is the percentile you'd like to find between 0 and 1.

To find the 90th percentile, we will use 0.9 for k.

Note that there is also a function called =PERCENTILE.EXC that calculates percentiles between 0 and 1, *exclusive*. This function is rarely used in

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practice.

The following example shows how to calculate the 90th percentile of a dataset in Excel.

Example: Calculating the 90th Percentile in Excel

Suppose we have the following dataset that shows the final exam scores of 20 students in a particular class:

	A	B	C	D	E	F	G
1	**Exam Score**						
2	65						
3	67						
4	68						
5	68						
6	70						
7	74						
8	78						
9	80						
10	81						
11	81						
12	81						
13	82						
14	83						
15	84						
16	87						
17	88						
18	93						
19	94						
20	95						
21	97						
22							
23							
24							
25							
26							

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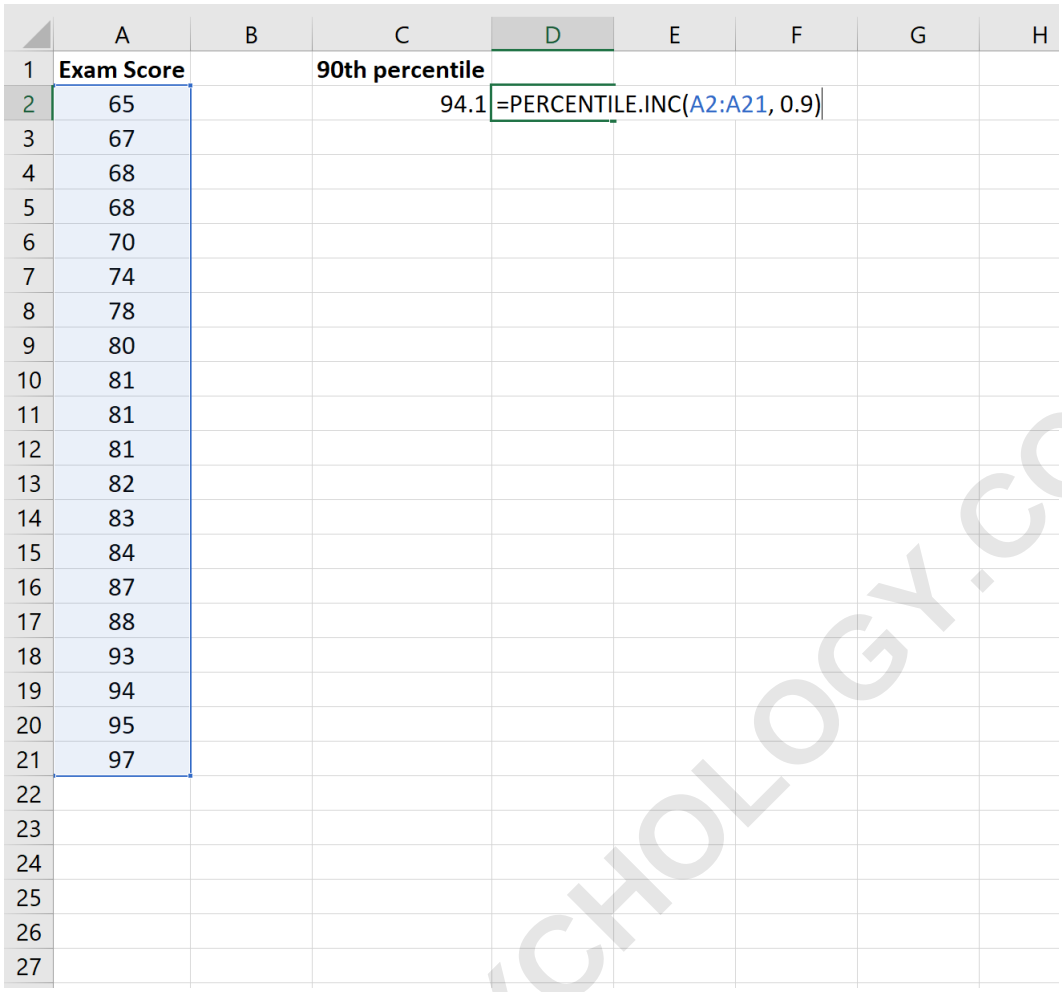
We can use the following syntax to find the 90th percentile of the exam scores:



	A	B	C	D	E	F	G	H
1	**Exam Score**		**90th percentile**					
2	65		94.1	=PERCENTILE.INC(A2:A21, 0.9)				
3	67							
4	68							
5	68							
6	70							
7	74							
8	78							
9	80							
10	81							
11	81							
12	81							
13	82							
14	83							
15	84							
16	87							
17	88							
18	93							
19	94							
20	95							
21	97							
22								
23								
24								
25								
26								
27								

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The 90th percentile turns out to be 94.1.

This is the score that a student must receive in order to have a score that is greater than 90% of the exam scores in the entire class.

Notes

Keep in mind the following notes when calculating percentiles in Excel:

The value for k must always be between 0 and 1.The percentile function will display a #VALUE! Error if you enter a non-numeric value for k.The data in our example was sorted from lowest to highest exam scores, but a dataset does not need to be pre-sorted in this manner for the percentile function to work.

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