

Friday, June 5, 2020

Percentile

On a standardized test your score was reported to be in the 90th percentile.

What does this mean?

Your score was better than 90% of all those who took the test.

Percentile:

A number that represents the percent of data that falls below a given value.

If you tested at the 85th percentile that means that you scored higher than 85% of those taking the test.

Or you could say that 85% of those testing ended up below your score.

Or you could say that only 15% of those testing scored higher than you.

Use this set of #'s: 12, 9, 8, 15, 20, 3, 17, 9, 10, 14

1. 17 is at what percentile?

First put the data in order!

3, 8, 9, 9, 10, 12, 14, 15, 17, 20

- Find the # of data items below 17 → 8
- Find the total # of data items → 10

17 is at the 80th percentile

$$\text{Percentile} = \frac{8}{10} \times 100 = 80\%$$

3, 8, 9, 9, 10, 12, 14, 15, 17, 20

2. What number is at the 40th percentile?

- There is a total of 10 numbers: Find 40% of 10
 $(0.40)(10) = 4$
- Find the number in the list that has 4 items below it.
10 has four items (40% of the data) below it.

10 is at the 40th percentile

3, 8, 9, 9, 10, 12, 14, 15, 17, 20

3. 9 is at what percentile?

- Find the # of data items below 9 → 2
- Find the total # of data items → 10

$$\text{Percentile} = \frac{2}{10} \times 100 = 20\%$$

9 is at the
20th percentile

Use this data set, which is already in order:

24, 28, 29, 32, 33, 38, 38, 39, 41, 43, 44, 56, 57, 60, 68

1. What percentile is 38 at?

- Find the # of data items below 38 → 5
- Find the total # of data items → 15

$$\text{Percentile} = \frac{5}{15} \times 100 = 33\%$$

38 is at the
33rd percentile

24, 28, 29, 32, 33, 38, 38, 39, 41, 43, 44, 56, 57, 60, 68

2. What value is at the 80th percentile?

- There is a total of 15 numbers: Find 80% of 15
 $(0.80)(15) = 12$
- Find the number in the list that has 12 items below it.
57 has twelve items (80% of the data) below it.

57 is at the 80th percentile

Could you score at the 100th percentile?

Not using our definition of percentile.

You can't score better than 100% of all those who took the test.
(you can't score better than yourself!)

You can now do the last problem on Practice #30

This practice is due on Sunday, June 7 by 10:00 pm