

**Interpreting Percentiles**

To find the percentile that corresponds to a specific data entry  $x$ , use the formula:

$$\frac{\text{number of data entries less than } x}{\text{the total number of data entries}} \div$$

This is a Percent, so multiply by 100 or move the decimal two to the right

Oct 26-9:49 AM

Given: 38, 33, 40, 42, 34, 27, 44, 38, 32, 34, 45, 32, 23, 46, 27, 23, 30, 27, 41, 22, 26, 45, 31, 26, 19

Find the percentile that corresponds to 30

1. put numbers in numerical order  
19, 22, 23, 23, 26, 26, 27, 27, 27, 30, 31, 32, 32, 33, 34, 34, 38, 38, 40, 41, 42, 44, 45, 45, 46
2. Count the number of entries before the number in question
3. How many total entries?  
There are 9 data entries less than 30 and the total data entries is 25
4. DIVIDE  $9/25 = .36 = 36\%$

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**Z SCORE** - also called the standard score

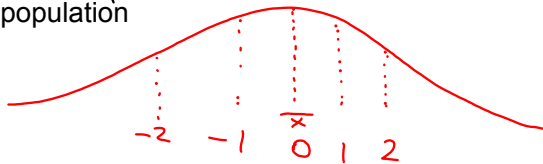
Represents the number of standard deviations a value  $x$  lies from the mean.

sample  

$$z = \frac{x - \bar{x}}{s}$$
 it is the number you are given, minus the mean and then divided by the standard deviation

population  

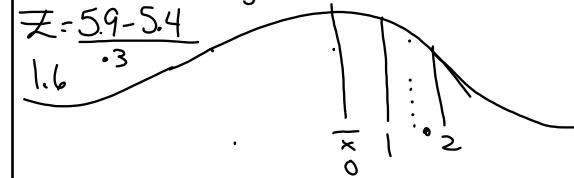
$$Z = \frac{x - \mu}{\sigma}$$



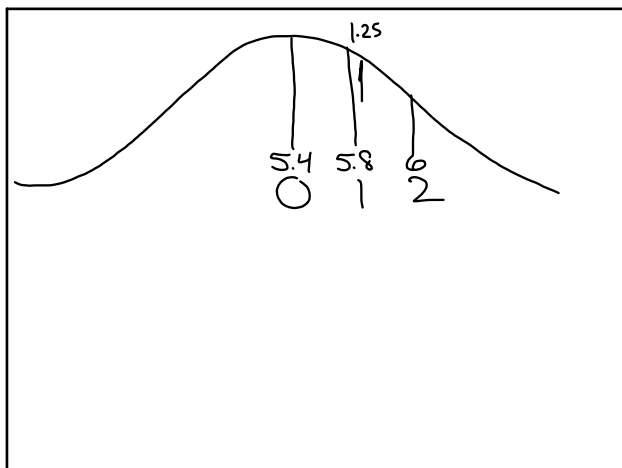
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The distribution of heights of students at Monarch High School in 2016 is approximately bell shaped. The mean height 5.4 feet with a standard deviation of .3. If Michelle is 5.9 feet tall, determine if her height is unusual.

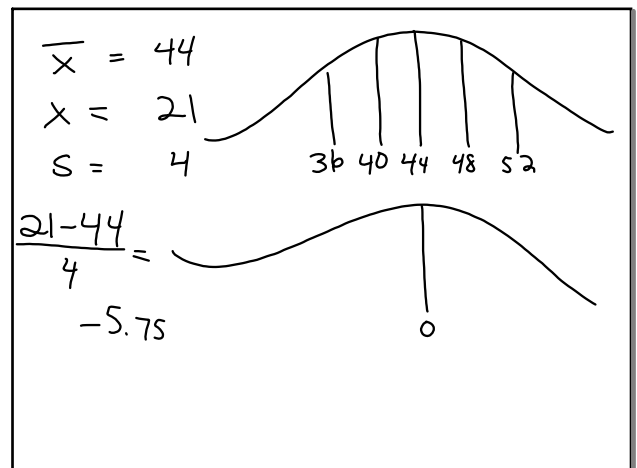
$\mu = 5.4$  How far from the mean is her height?  
 $\sigma = .3$



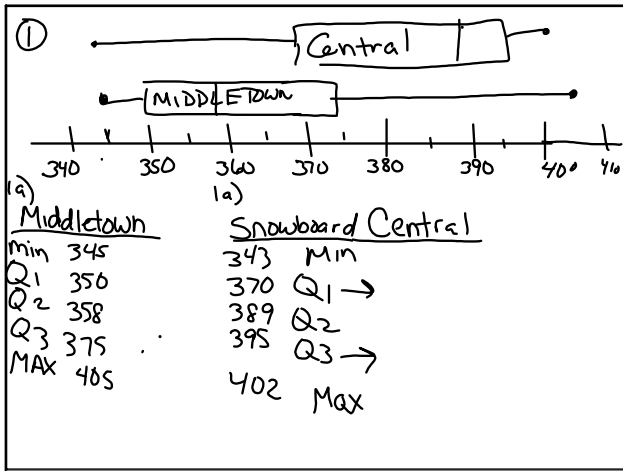
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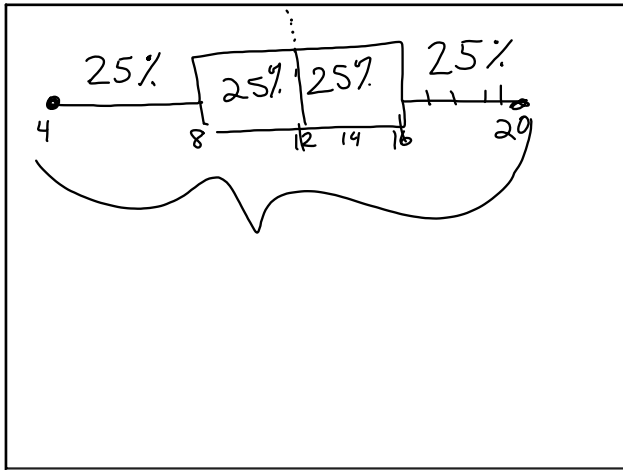
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Oct 27-10:43 AM



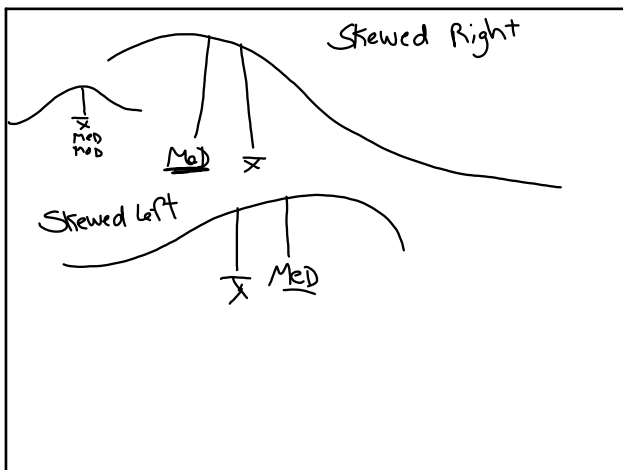
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Q<sub>1</sub> - Lower Quartile 25%

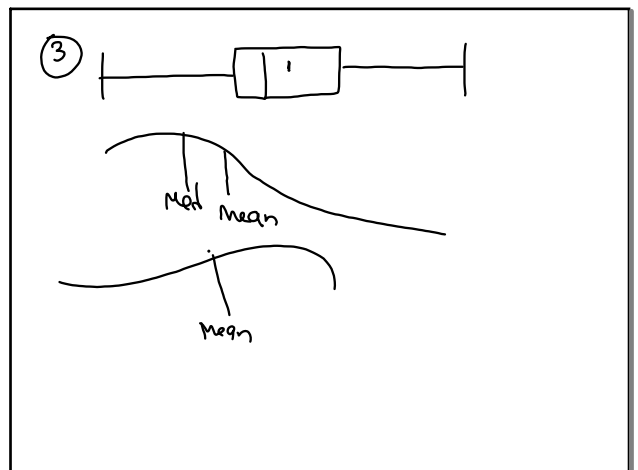
Q<sub>2</sub> Median 50%

Q<sub>3</sub> Upper Quartile 75%

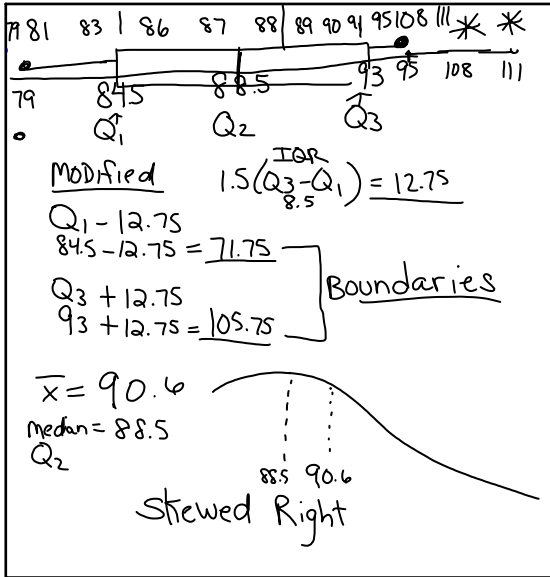
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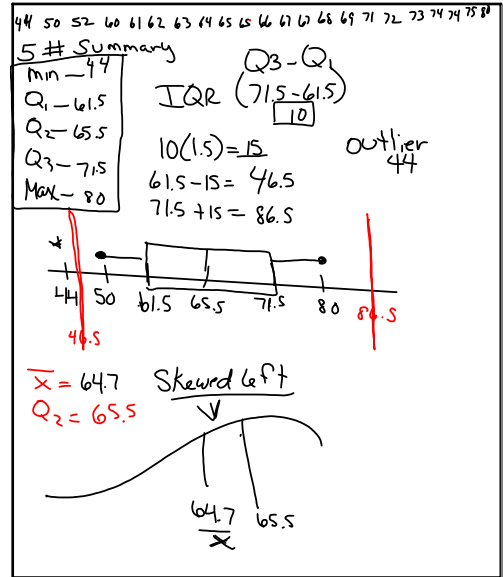
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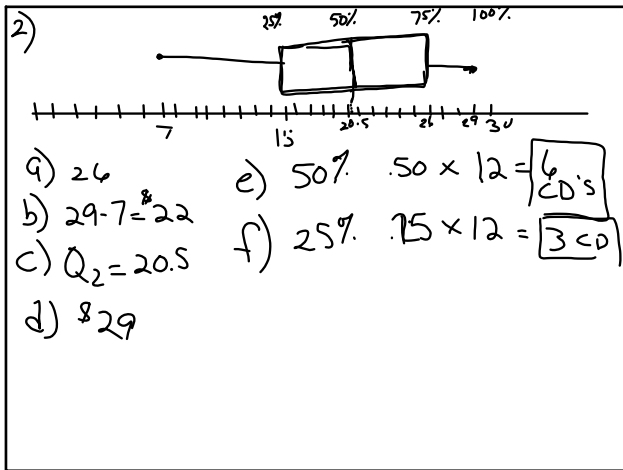
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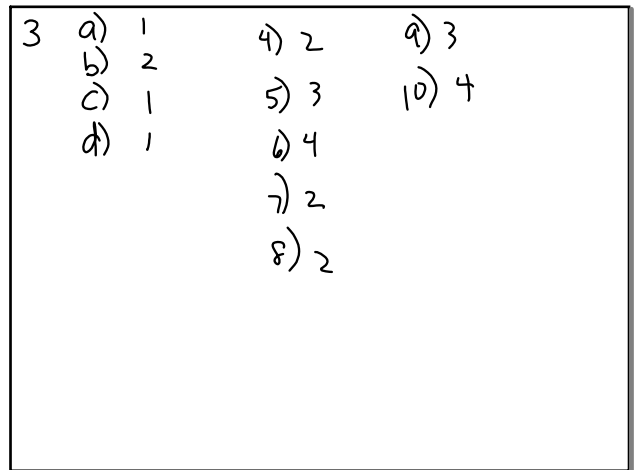
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