

## 11.2 Apply Transformations To Data

Find the statistics for the following:

7, 12, 16, 20, 20

mean = 15  
 median = 16  
 mode = 20  
 range = 13  
 standard dev. = 4.98

Find the statistics for the following:

17, 22, 26, 30, 30

mean = 25  
 median = 26  
 mode = 30  
 range = 13  
 S.d. = 4.98

When a constant is added to every value in a data set,

- The mean, median, and mode of the new data set can be obtained by adding the same constant to the mean, median and mode of the original set.
- The range and standard deviation are unchanged.

central  
 dispersion

Find the statistics for the following:

14, 24, 32, 40, 40

$$\text{mean} = 30$$

$$\text{Median} = 32$$

$$\text{mode} = 40$$

$$\text{range} = 26$$

$$\text{s.d.} = 9.95$$

$$\sqrt{\frac{16^2 + 6^2 + 2^2 + 10^2 + 10^2}{5}}$$

7, 12, 16, 20, 20

$$\text{mean} = 15$$

$$\text{median} = 16$$

$$\text{mode} = 20$$

$$\text{range} = 13$$

$$\text{s.d.} = 4.98$$

When each value of a data set is multiplied by a constant, the new mean, median, mode, range, and standard deviation can be found by multiplying each original statistic by the same constant.

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2, 4, 7, 10, 14 – 20 even, 26 - 29