

## Study Guide

**Integration: Statistics**  
**Measures of Central Tendency**

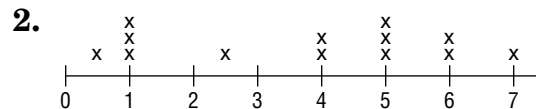
In working with statistical data, it is often useful to have one value represent the complete set of data. For example, **measures of central tendency** represent centralized values of the data. Three measures of central tendency are the **mean**, **median**, and **mode**.

| Definitions   |   | Examples  |
|---------------|---|---|
| <b>Mean</b>   | Sum of the elements in the set divided by the number of elements in the set.  | <b>Data:</b> 24, 36, 21, 30, 21, 30<br>$\frac{24 + 36 + 21 + 30 + 21 + 30}{6} = 27$ |
| <b>Median</b> | The middle of a set of data when the numbers are arranged in numerical order. In an even number of elements, the median is halfway between the two middle elements. | <b>Data:</b> 21, 21, 25, 30, 31, 42<br>$\frac{25 + 30}{2} = 27.5$                   |
| <b>Mode</b>   | The number that occurs most often in a set of data.   | <b>Data:</b> 21, 21, 24, 30, 30, 36<br>There are two modes, 21 and 30.              |

**Find the mean, median, and mode for each set of data.**

1.

| Month     | Days above 90°F |
|-----------|-----------------|
| May       | 4               |
| June      | 7               |
| July      | 14              |
| August    | 12              |
| September | 8               |



3. 3, 6, 6, 3, 6, 6, 3, 3      4. 19, 3, 0, 1      5.  $\frac{1}{4}, \frac{2}{5}, \frac{2}{8}, \frac{1}{3}$       6.  $1, \frac{1}{2}, 2, \frac{1}{3}, 3, \frac{1}{4}, 4, \frac{1}{8}$

**Find the median and mode(s) of the data shown in each stem-and-leaf plot.**

7.

| Stem | Leaf        |
|------|-------------|
| 2    | 4 7 7       |
| 3    | 1 2 6 6 6 9 |
| 4    | 0           |
| 5    | 8 8 9       |

$3|2 = 32$

8.

| Stem | Leaf        |
|------|-------------|
| 9    | 0 0 1 3 9   |
| 10   | 2 2 5       |
| 11   |             |
| 12   | 0 3 3 8 8 9 |

$10|5 = 105$