**Review** **Mean, Median, Mode**

**Mean** $= \dfrac{\text{sum of the data items}}{\text{total number of data items}}$

Use the mean to describe the middle of a set of data that *does not* have an outlier. An **outlier** is a data value that is much higher or lower than the other data values in the set. The mean is often referred to as the average.

The **median** is the middle value in the set when the numbers are arranged in order. For a set containing an even number of data items, the median is the mean of the two middle data values.

Use the median to describe the middle of a set of data that *does* have an outlier.

The **mode** is the data item that occurs the most times. It is possible for a set of data to have no mode, one mode, or more than one mode.

Use the mode when the data are nonnumeric or when choosing the most popular item.

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# Lesson 1.2 • Summarizing Data with Measures of Center

Name _____ Period _____ Date _____

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

**a.** {10, 54, 72, 43, 25, 29, 36, 10, 68}

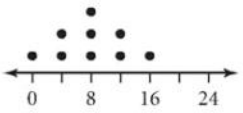
**b.** {16, 11, 31, 19, 12, 17, 13, 14}

**c.** {12, 26, 21, 36, 25, 20, 21}

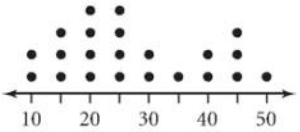
**d.** {25, 25, 30, 30, 35, 35}

**2.** Find the mean, median, and mode of each dot plot.

**a.**




**b.**



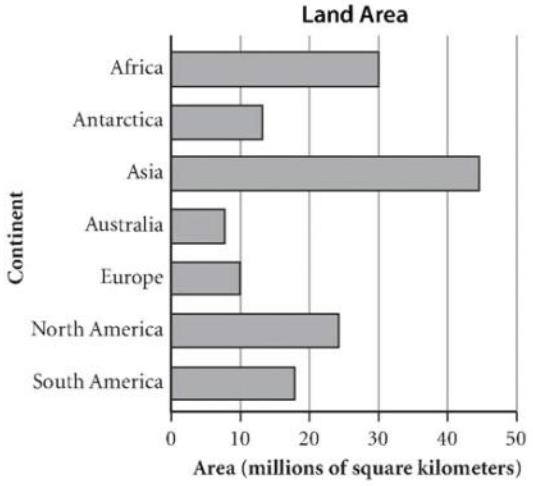

**3.** Create a data set that fits each description.

**a.** The median age of Shauna and her six siblings is 14. The range of their ages is 12 years and the mode is 10.

**b.** Jorge took six math tests during the current marking period. His mean mark is 83 and his median mark is 85.

**c.** Laurel took a survey of the number of coins eight students had in their pockets. The minimum was 7, the mode was 11, the median was 10, and the range was 9.

**4.** This bar graph shows the approximate land area of the seven continents.




**a.** Find the approximate mean and median of this data set.

**b.** What is the approximate range of this data set?

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# Lesson 1.3 • Five-Number Summaries and Box Plots

Name _____ Period _____ Date _____

**1.** Find the five-number summary for each data set.

**a.** {37, 44, 5, 8, 20, 11, 14}

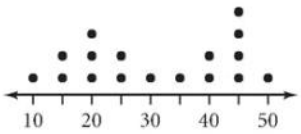
**b.** {10, 1, 3, 4, 30, 4, 20, 22, 10, 25, 30}

**c.** {25, 27, 33, 14, 31, 16, 22, 24, 43, 25, 37, 39, 42}

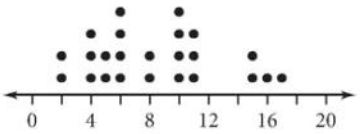
**d.** {35, 17, 2, 32, 47, 13, 22, 7, 21, 55, 5, 52, 34, 41, 25, 8}

**2.** Circle the points that represent the five-number summary values in the dot plots below. If two data points are needed to calculate the median, first quartile, or third quartile, draw a circle around both points. List the five-number summary values for each plot.

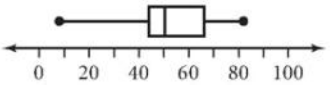
**a.**




**b.**




**3.** Which data set matches this box plot? (More than one answer may be correct.)




**a.** {70.2, 52, 24.5, 61, 77, 26, 9, 51, 64, 28, 54, 28}

**b.** {59, 47, 79, 8, 65, 42, 23, 70, 82, 62, 48, 42, 52, 67.5, 49, 46}

**c.** {82, 36, 42, 8, 61, 50}

**4.** Create a data set with the five-number summary 6, 10, 12, 15, 20 that contains each number of values.

**a.** 11

**b.** 12

**5.** This table shows the number of bachelor's degrees earned in various fields at a private university for 1994 and 2004.

**Bachelor's Degrees Awarded**

| Degree field | 1994 | 2004 |
|---|---|---|
| Architecture | 76 | 78 |
| Biological sciences | 158 | 172 |
| Business and management | 410 | 422 |
| Computer science | 132 | 205 |
| Cultural studies | 25 | 46 |
| Education | 247 | 261 |
| Engineering | 351 | 370 |

| Degree field | 1994 | 2004 |
|---|---|---|
| English literature | 129 | 143 |
| Law | 18 | 29 |
| Mathematics | 62 | 65 |
| Philosophy | 43 | 52 |
| Physical sciences | 107 | 110 |
| Visual and performing arts | 154 | 141 |

**a.** Give the five-number summaries and the mean for each data set.

**b.** Create a box plot for each data set on the same number line.