

LESSON
14-4

Practice B

Data Distributions

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

1. 22, 45, 30, 18, 22

2. 8, 10, 8, 14, 8, 15

3. 1.25, 0.5, 3.25, 0.75, 1.75

4. 95, 92, 96, 93, 94, 95, 93

Identify the outlier in each data set, and determine how the outlier affects the mean, median, mode, and range of the data.

5. 31, 35, 41, 40, 40, 98

6. 82, 24, 100, 96, 79, 93, 86

7. The amounts of Cathy's last six clothing purchases were \$109, \$72, \$99, \$15, \$99, and \$89. For each question, choose the mean, median, or mode, and give its value.

a. Which value describes the average of Cathy's purchases? _____

b. Which value would Cathy tell her parents to convince them that she is not spending too much money on clothes? Explain.

c. Which value would Cathy tell her parents to convince them that she needs an increase in her allowance? Explain.

Use the data to make a box-and-whisker plot.

8. 71, 79, 56, 24, 35, 37, 81, 63, 75

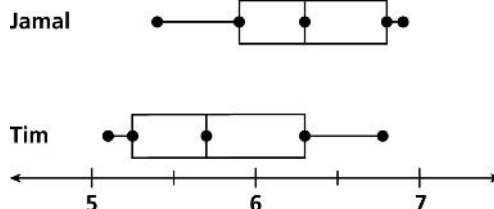
9. 210, 195, 350, 250, 260, 300

The finishing times of two runners for several one-mile races, in minutes, are shown in the box-and-whisker plots.

10. Who has the faster median time? _____

11. Who has the slowest time? _____

12. Overall, who is the faster runner? Explain.



2. a. 0.81
b. 0.27
3. D
4. J

Reading Strategy

| | Yes | No | Total |
|----------|------|------|-------|
| Children | 0.40 | 0.04 | 0.44 |
| Adults | 0.36 | 0.2 | 0.56 |
| Total | 0.76 | 0.24 | 1 |

14-4 DATA DISTRIBUTIONS

Practice A

1. 7, 9, 10, 19, 25

mean:

$$\frac{\boxed{7} + \boxed{9} + \boxed{10} + \boxed{19} + \boxed{25}}{\boxed{5}} = 14$$

median: 10

mode: none

range: $25 - 7 = 18$

2. 2, 3, 3, 5, 5, 5, 5

mean: 4 median: 5

mode: 5 range: 3

3. mean: 11

median: 10.5

mode: 8 and 12

range: 9

4. outlier: 29, increases mean by 4.25, median by 1.5, and range by 18, no effect on mode

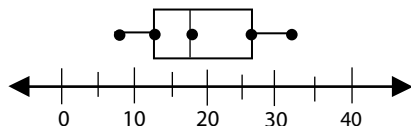
5. outlier: 11, decreases mean by 8.5, median by 2.5, no effect on mode, increases range by 28

- 6a. mean, 44

- 6b. median, 50, because it is higher than the mean.

- 7a. 8, 10, 14, 15, 18, 22, 22, 30, 33

- 7b. 8, 12, 18, 26, 33



8. Liam

9. Vicki

10. Liam

Practice B

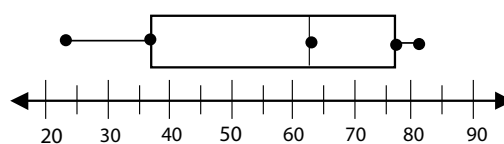
1. mean: 27.4 median: 22
mode: 22 range: 27
2. mean: 10.5 median: 9
mode: 8 range: 7
3. mean: 1.5 median: 1.25
mode: none range: 2.75
4. mean: 94 median: 94
modes: 93, 95 range: 4
5. outlier: 98, increases mean by 10.1 and range by 57, no effect on median or mode
6. outlier: 24, decreases mean by $9\frac{1}{3}$, median by 3.5, increases range by 55, no effect on mode

- 7a. mean: \$80.50

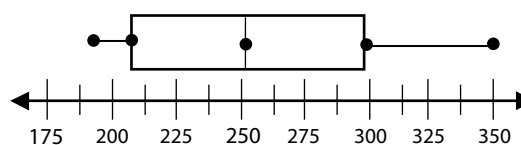
- 7b. mean, because it is the lowest of the three measures, lower because of the outlier \$15

- 7c. mode, \$99, because it is the greatest of the three measures

8.



9.



10. Tim

11. Jamal

12. Tim, his box is to the left of Jamal's.

Practice C

1. mean: 42.6 median: 35
mode: none range: 97.5
2. mean: 0.75 median: 2
mode: -6, 4 range: 12
3. mean: $6\frac{19}{20}$ median: $7\frac{3}{10}$
mode: none range: $7\frac{4}{5}$