

LESSON
14-4

Practice C
Data Distributions

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

1. 35, 20.5, 100, 55, 2.5

2. -6, 4, 6, -6, 0, 3, 4, 1

3. $10\frac{1}{2}$, $2\frac{7}{10}$, $8\frac{1}{5}$, $6\frac{2}{5}$

4. -1, -1, 0, 0, 1, 1

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

5. 119, 125, 183, 122, 120, 111

6. 0.015, 0.01, 0.8, 0.02, 0.016

7. The weights of randomly selected vitamins, in milligrams, in a quality control test were 582.4, 585, 579.8, 561.4, and 583.1. For each question, choose the mean, median, or mode, and give its value.

- a. Which value describes the average weight of the vitamins? _____
- b. Which value describes the typical weight of a vitamin? _____
- c. The ideal weight of a vitamin is 581.5 milligrams. Which value would a technician give his boss to convince him that their machinery needs to be inspected? Explain.

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

8. 6.2, 6.1, 6.9, 7.4, 8.3, 6.3, 7.5, 6.2

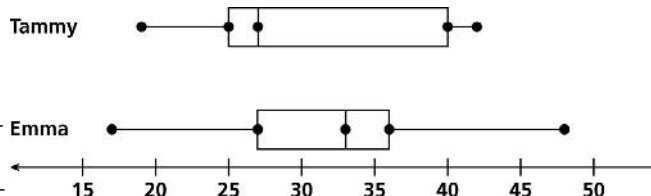
9. 105, 76, 101, 93, 125, 127, 110, 98, 95

The number of e-mails received by two friends per day every day for one month is shown in the box-and-whisker plots.

10. Estimate the difference in the median number of e-mails.

11. Overall, who would you say gets more e-mails?

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

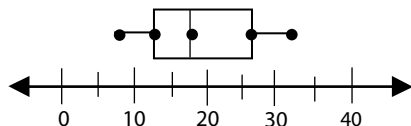
5. outlier: 11, decreases mean by 8.5, median by 2.5, no effect on mode, increases range by 28

- 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

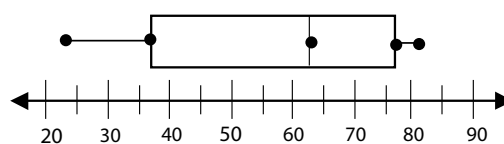
6. outlier: 24, decreases mean by $9\frac{1}{3}$, median by 3.5, increases range by 55, no effect on mode

- 7a. mean: \$80.50

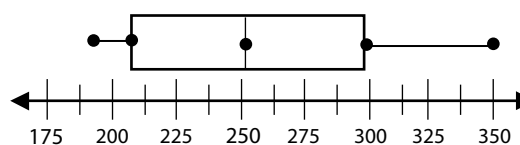
- 7b. mean, because it is the lowest of the three measures, lower because of the outlier \$15

- 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

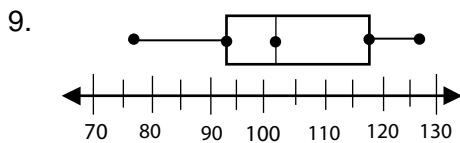
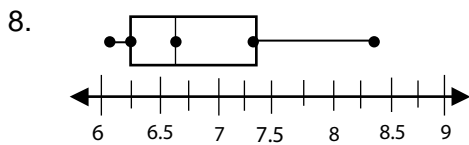
1. mean: 42.6 median: 35
mode: none range: 97.5
2. mean: 0.75 median: 2
mode: -6, 4 range: 12
3. mean: $6\frac{19}{20}$ median: $7\frac{3}{10}$
mode: none range: $7\frac{4}{5}$

4. mean: 0 median: 0
mode: -1, 0, and 1 range: 2
5. outlier: 183, increases mean by 10.6,
median by 1, and range by 58, no effect
on mode
6. outlier: 0.8, increases mean by 0.15695,
median by 0.0005, and range by 0.78, no
effect on mode

7a. mean: 578.34 mg

7b. median, 582.4 mg; The outlier 561.4
affects the mean.

7c. mean; It is further from the ideal weight
than the median.

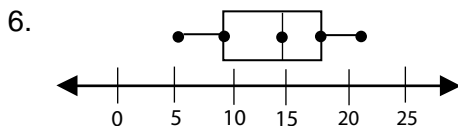


10. about 6

11. Possible answer: Emma, half of her
counts are greater than 33, compared to
27 for Tammy.

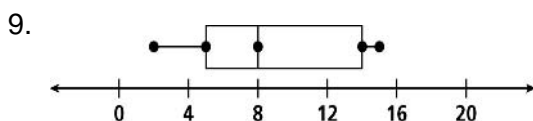
Review for Mastery

- 8, 2, 3, 4, 3, 20, 4; median: 3, mode: 3,
range: 6
- mean: 5.5, median: 5, mode: 4 and 5,
range: 4
- mean: 10, median: 10, mode: none,
range: 12
- 5, 9, 11, 14, 18, 18, 21
- 5, 9, 14, 18, 21



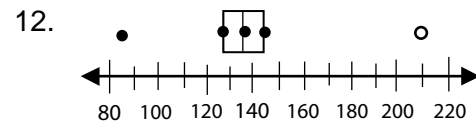
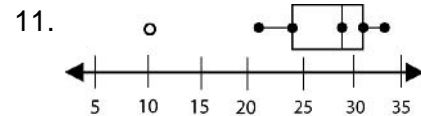
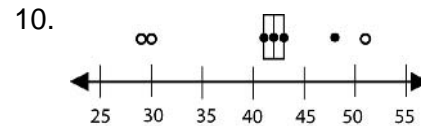
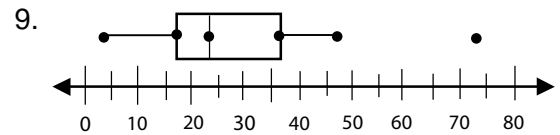
7. 2, 5, 7, 9, 14, 15

8. 2, 5, 8, 14, 15



Challenge

- 18
- 36.5
- 18.5
- 27.75
- 9.75
- 64.25
- 73
- mild



Problem Solving

- mean: \$64, median: \$58, mode: none;
The median because only one price is
above the mean.
- mean: 40.125, median: 34, mode: 33;
The mean decreases by 5.125, median
decreases by 1.
- mean: 84, median: 76, mode: 76; the
mean
- mean: ≈ 8.4 , median: 8, mode: 8; the
mode
- B
- F
- B

Reading Strategies

- the mean
- because 2 occurs more often
- when there is an even number of data
values
- The mode occurs most often; an outlier is
different from the other numbers, so an
outlier cannot be a mode.
- mean: 8, median: 8.5, mode: 3 and 10