Name _____ Date _____ Class _____

LESSON **Practice B**
6-3 *Additional Data and Outliers*

Use the table to answer Exercises 1–2.

1. The table shows population data for
some of the least-crowded states.
Find the mean, median, and mode of
the data.

_____

_____

2. Alaska has the lowest population
density of any state. Only about 1
person per square mile lives there.
Add this number to the data in the
table and find the mean, median,
and mode.

_____

_____

Population Densities

State	People (per mi²)
Idaho	16
Nevada	18
New Mexico	15
North Dakota	9
South Dakota	10

Use the table to answer Exercises 3–4.

3. The table shows some of the states
with the most counties. Find the
mean, median, and mode of the data.

_____

_____

4. With 254 counties, Texas has more
counties than any other state. Add this
number to the data in the table and
find the mean, median, and mode.

_____

_____

State Counties

State	Number of Counties
Illinois	102
Iowa	99
North Carolina	100
Tennessee	95
Virginia	95

6. In Exercise 4, why is the number of
counties in Texas an outlier for the
data set? Which measurement best
describes the data set with Texas
included?

_____

5. In Exercise 1, which measurement
best describes the data? Why is
Alaska's population density an outlier
for that data set?

_____

_____

Holt Middle School Math   Course 1

Puzzles, Twisters & Teasers
Painting Mystery

For each set of numbers find the mean, the mode, and the median, in that order. Look for the letters in the boxes below and Round each answer to the nearest tenth. To solve the puzzle, read the answers(horizontally) across the mean, mode, and median columns from 1 to 12.

Numbers	Mean	Mode	Median
88, 82, 75, 75, 75	79	75	75
63, 24, 24, 37, 77, 52, 24	43	24	37
95, 100, 100, 105	100	100	100
13, 25, 47, 100, 100	57	100	47
59, 62, 62, 75, 86, 94	73	62	68.5
25, 25, 24, 24, 23, 27, 26	24.9	25 and 24	25
25, 28, 29, 26, 29, 25, 25, 30, 26	27	25	26
81, 75, 63, 51, 41, 24, 22, 18, 22	44.1	22	41
25, 30, 35, 30, 30	30	30	30
5, 15, 10, 23, 23	15.2	23	15
26, 57, 57, 33, 37	42	57	37
24, 36, 80, 24, 24	37.6	24	24

Mean Box
A = 27
M = 43
A = 57
N = 44.1
E = 24.9
O = 79
E = 100
T = 42
L = 15.2
Y = 37.6
L = 73
L = 30

Mode Box
A = 23
N = 75
C = 100
O = 24
D = 22
T = 25
E = 57
T = 24, 25
I = 62
L = 30

Median Box
A = 26
P = 30
E = 75
R = 37
H = 25
R = 100
I = 41
S = 15
K = 47
U = 24
K = 68.5

What did the painter say to the wall?

O N E   M O R E   C R A C K

L I K E   T H A T   A N D

I ' L L   P L A S T E R   Y O U !

Exploration Recording Sheet
Additional Data and Outliers

Casey Fitzrandolph won the men's 500-meter speed-skating competition in the 2002 Olympics with a time of **69.23 seconds.** The table lists the top 32 times in the 500-meter race.

69.23	69.26	69.47	69.49	69.59	69.60	69.60	69.81
69.86	69.89	70.10	70.11	70.28	70.32	70.33	70.44
70.57	70.75	70.84	70.88	70.97	71.27	71.39	71.54
71.96	72.07	72.49	72.58	72.64	72.69	72.93	74.81

1. Find the range, which is the difference between the fastest and the slowest time. _____ **5.58 s**

2. Find the median, which is the number in the middle of the data set. _____ **70.505 s**

3. Find the mean with a calculator. _____ **70.8675 s**

4. The table excluded three more times. These times are 108.46, 117.41, and 133.57. Calculate the range, median, and mean including these three additional times.

64.34 s, 70.75 s, 75.0629 s

Think and Discuss Possible answers:

5. Discuss why the last three times in Exercise 4 were excluded from the table above.

They are numbers that are so far away from the rest

that their presence misrepresents the data.

6. Describe how the additional three times affect the range, median, and mean.

The range and mean increase significantly. The median is barely affected.

Practice A
Additional Data and Outliers

Use the graph to answer Exercises 1–2.

1. The graph shows how many moons several planets have. Find the mean, median, and mode of the data.

mean: 3; median: 1.5; mode: 1

Planet Moons

2. With 18 moons, Saturn has more moons than any other planet in our solar system. Add this number to the data in the graph, and find the mean, median, and mode.

mean: 6; median: 2; mode: 1

Use the graph to answer Exercises 3–4.

3. The graph shows several of the countries that have sent the most astronauts into space. Find the mean, median, and mode of the data.

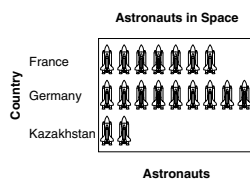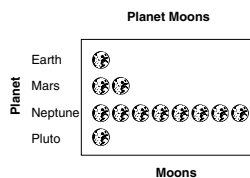**mean: 6; median: 7; mode: none**

Astronauts in Space

4. The United States has sent 234 astronauts into space—more than any other country. Add this number to the data in the graph and find the mean, median, and mode.

mean: 63; median: 8; mode: none

5. In Exercise 2, which measurement was affected the least by the addition of Saturn's data?

the mode

6. Is the data in Exercise 4 best described by the mean, median, or mode?

the median

Practice B
Additional Data and Outliers

Use the table to answer Exercises 1–2.

1. The table shows population data for some of the least-crowded states. Find the mean, median, and mode of the data.

mean: 13.6; median: 15; mode: none

Population Densities

State	People (per mi²)
Idaho	16
Nevada	18
New Mexico	15
North Dakota	9
South Dakota	10

2. Alaska has the lowest population density of any state. Only about 1 person per square mile lives there. Add this number to the data in the table and find the mean, median, and mode.

mean: 11.5; median: 12.5; mode: none

Use the table to answer Exercises 3–4.

3. The table shows some of the states with the most counties. Find the mean, median, and mode of the data.

mean: 98.2; median: 99; mode: 95

State Counties

State	Number of Counties
Illinois	102
Iowa	99
North Carolina	100
Tennessee	95
Virginia	95

4. With 254 counties, Texas has more counties than any other state. Add this number to the data in the table and find the mean, median, and mode.

mean: 124.16̄; median: 99.5; mode: 95

5. In Exercise 1, which measurement best describes the data? Why is Alaska's population density an outlier for that data set?

the mean; because it is much lower than the other data

6. In Exercise 4, why is the number of counties in Texas an outlier for the data set? Which measurement best describes the data set with Texas included?

because Texas has many more counties; the median