9.3 BOOKWORK ANSWERS WITH WORK PG. 407-408 #7-21 ODD

I PUT THE EVEN ANSWERS ON HERE ALSO, IN CASE YOU NEEDED EXTRA PRACTICE

7. Ordered data: 3, 3, 5, 7, 8, 9, 11

Median: The middle value is 7.

Mode: The value 3 occurs most often.

The median is 7, and the mode is 3.

8. Ordered data: 13, 14, 14, 16, 16, 19

$$\text{Median} = \frac{14 + 16}{2} = \frac{30}{2} = 15$$

Mode: The values 14 and 16 occur most often.

The median is 15, and the modes are 14 and 16.

9. Ordered data: 71, 81, 89, 92, 93, 94, 94, 99

$$\text{Median} = \frac{92 + 93}{2} = \frac{185}{2} = 92.5$$

Mode: The value 94 occurs most often.

The median is 92.5, and the mode is 94.

10. Ordered data: 13, 19, 27, 33, 36, 44, 52

Median: The middle value is 33.

The median is 33. There is no mode.

11. Ordered data: 2, 4, 12, 12, 17, 18, 28, 29, 33

Median: The middle value is 17.

Mode: The value 12 occurs most often.

The median is 17, and the mode is 12.

12. Ordered data: 40, 44, 44, 48, 55, 55, 58, 67

$$\text{Median} = \frac{48 + 55}{2} = \frac{103}{2} = 51.5$$

Mode: The values 44 and 55 occur most often.

The median is 51.5, and the modes are 44 and 55.

13. The data are not ordered from least to greatest

The median is 55.

49, 50, 51, 55, 58, 59, 63

14.

Shirt color	Tally	Frequency
Black	𝍸 |	6
Pink	|	1
Gray	|	1
Blue	𝍸 |	6
Yellow	|	1
Green	|	1
Orange	|	1
Red	||	2

The modes are black and blue.

15.

Act	Tally	Frequency
Singing	𝍸 ||	7
Juggling	|	1
Comedy	||	2
Poetry	||	2
Dancing	𝍸	5
Magic	|	1

The mode is singing.

16. no; You cannot find the mean and median of a set of data that is not made up of numbers.

17. Ordered data: 11, 12, 32, 43, 45, 48, 48, 48

$$\text{Mean} = \frac{11 + 12 + 32 + 43 + 45 + 48 + 48 + 48}{8}$$

$$= \frac{287}{8} = 35.875$$

$$\text{Median} = \frac{43 + 45}{2} = \frac{88}{2} = 44$$

Mode: The value 48 occurs most often.

The mean is 35.875, the median is 44, and the mode is 48.

Sample answer: The median best represents the data. It is closest to most of the data. The mean is less than most of the data, and the mode is the greatest value.

18. Ordered data: 7, 12, 13, 40, 88, 95, 95

$$\text{Mean} = \frac{7 + 12 + 13 + 40 + 88 + 95 + 95}{7} = \frac{350}{7} = 50$$

Median: The middle value is 40.

Mode: The value 95 occurs most often.

The mean is 50, the median is 40, and the mode is 95.

Sample answer: The mean best represents the data. The mode is the greatest value, and the median is too far from the greater values.

19. Ordered data: 2, 2, 4, 5, 8, 9, 10, 12, 56

$$\text{Mean} = \frac{2 + 2 + 4 + 5 + 8 + 9 + 10 + 12 + 56}{9}$$

$$= \frac{108}{9}$$

$$= 12$$

Median: The middle value is 8.

Mode: The value 2 occurs most often.

The mean is 12, the median is 8, and the mode is 2.

Sample answer: The median best represents the data. The mean is greater than most of the data, and the mode is the least value.

20. Ordered data: 62, 81, 103, 126, 144, 144

$$\text{Mean} = \frac{62 + 81 + 103 + 126 + 144 + 144}{6}$$

$$= \frac{660}{6}$$

$$= 110$$

$$\text{Median} = \frac{103 + 126}{2} = \frac{229}{2} = 114.5$$

Mode: The value 144 occurs most often.

The mean is 110, the median is 114.5, and the mode is 144.

Sample answer: Either the mean or the median best represents the data, because both are at the middle of the data. The mode is the greatest value.

21. The value 17 is much less than any other data value. So, it is the outlier.

Ordered data: 17, 42, 45, 52, 54, 57, 58, 63

Mean with outlier

$$= \frac{17 + 42 + 45 + 52 + 54 + 57 + 58 + 63}{8}$$

$$= \frac{388}{8}$$

$$= 48.5$$

$$\text{Median with outlier} = \frac{52 + 54}{2} = \frac{106}{2} = 53$$

With the outlier, the mean is 48.5, the median is 53, and there is no mode.

Mean without outlier

$$= \frac{42 + 45 + 52 + 54 + 57 + 58 + 63}{7}$$

$$= \frac{371}{7}$$

$$= 53$$

Median without outlier: The middle value is 54.

Without the outlier, the mean is 53, the median is 54, and there is no mode.

The outlier reduces the median slightly, but reduces the mean even more. There is no mode with or without the outlier.