

A 6th Grade Home Base was surveyed and asked how many hours of TV do you watch per day during the summer. The data is below.

2	7	4	3	2	1	1	0	2
5	3	3	4	3	2	5	4	3

Mean, Median, Mode, and Range

0, 1, 1, 2, 2, 2, 2, 3, 3, | 3, 3, 3, 4, 4, 4, 5, 5, 7

Mean = 3	Median = 3	Mode = 3	Range = 7
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Does the mean or the median better describe the center of this data? Explain.

Either. They are both the same.

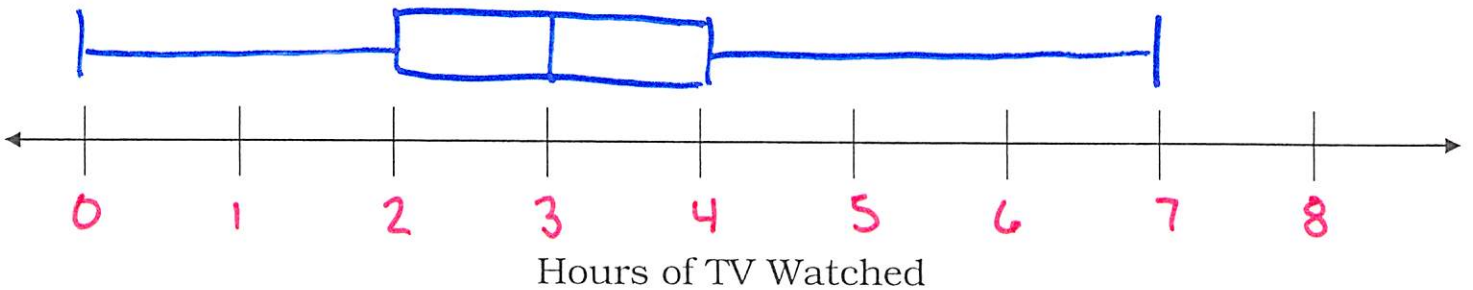
* Choose mean if no outliers

* Outliers affect the mean

* Choose median if there are outliers

Box-and-Whisker Plot

Minimum = 0	Q1 = 2	Median = 3	Q3 = 4	Maximum = 7
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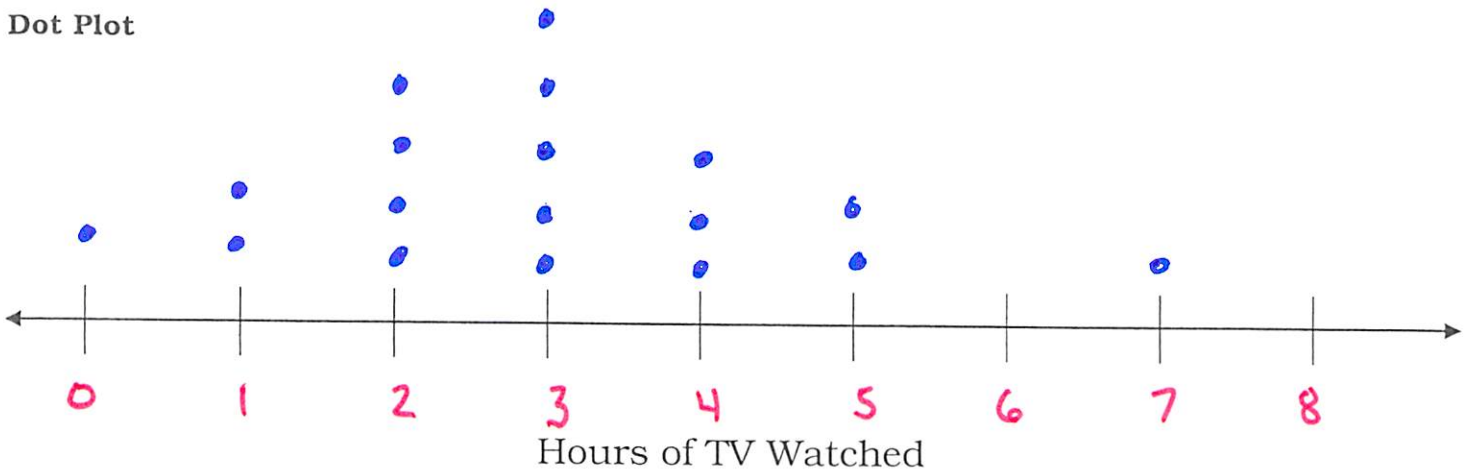
Answer the following:

1. What is the Inter-Quartile Range? 2

2. What percent of the data falls between 0 and 4 hours of TV? 75%

3. A student who watches 3 hours of TV watches more TV than half of the class? True False

Dot Plot



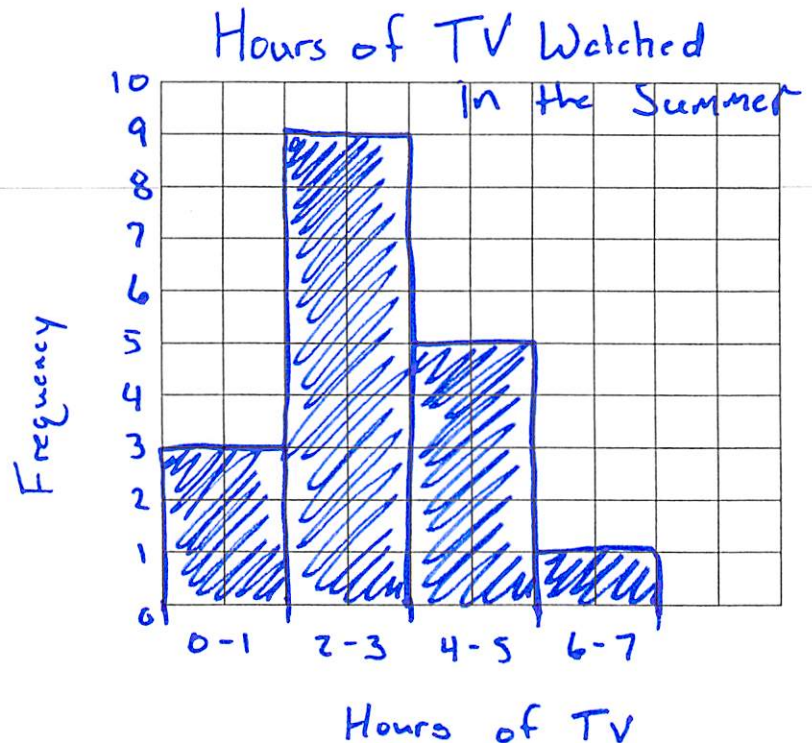
Answer the following:

1. What is the mode Hours of TV watched? 2
2. Where are the Clusters? 2-4 Gaps? 6 Outliers? 7
3. If the mean is 3 hours, what value has a deviation of -1? 2
4. If the mean is 3 hours, what value(s) have an absolute deviation of 2? 1 and 5
5. How would you describe the variability for this data set? Why?

This data set has rather low variability. The data is mostly grouped around the mean and median and has few outliers.

Histogram

Interval	Tally	Frequency
0-1		3
2-3		9
4-5		5
6-7		1



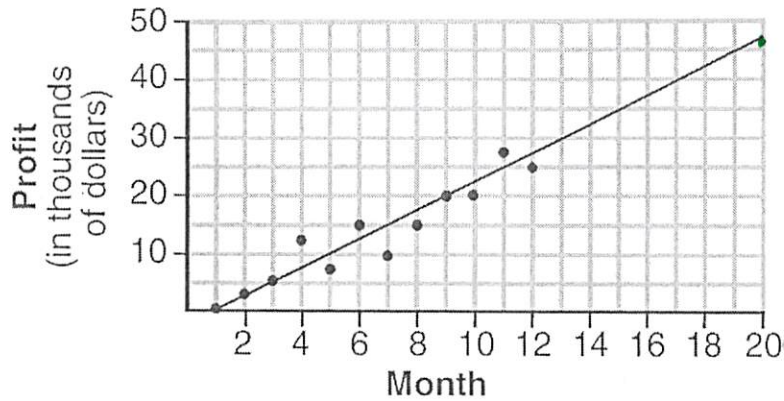
Answer the following:

1. How many students watched between 2 and 5 hours of TV? 14

Scatter Plot

The scatter plot below shows the profit, by month, for a new company for the first year of operation. Kate drew a line of best fit, as shown in the diagram.

Base your answers to the following questions on the Scatter Plot below.



1. The 30 on the vertical axis really stands for \$ 30,000
2. What type of correlation is there between Profit and the number of months? Positive

Fill in the blanks:

3. As the Number of Months increase, the Profit for the company increases.
4. How much profit do you predict the company will make in their 20th month? \$ 46,000

Find the Missing Value Given the Mean:

Juan received scores of 82, 76, 93, and 80 on his first four chemistry tests of the year. His goal is to have an 86 average in chemistry for his first five tests. What score must he earn on the next test to achieve an average of exactly 86?

$$\frac{82 + 76 + 93 + 80 + x}{5} = 86$$

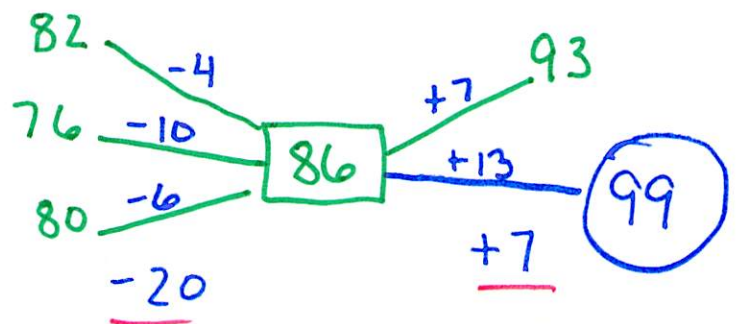
~~$$\frac{331 + x}{5} = 86 \cdot 5$$~~

$$331 + x = 430$$

$$-331$$

$$-331$$

$$x = 99$$

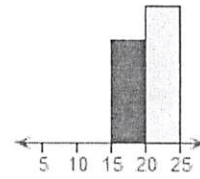
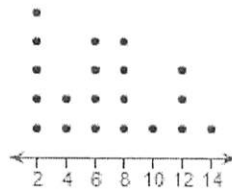
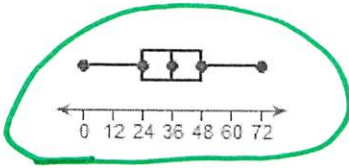


Need +13 to balance

Variability

largest range (most spread out)

Which of the following graphs displays the highest variability in its data set?



Mean Absolute Deviation

The Johnson Family has 6 people living in their house. The ages of each person are in the table below.

Johnson Family Ages					
8	12	13	15	44	46

Mean = 23

Find the Mean Absolute Deviation for the data.

	Mean	Abs. Deviation
8	23	15
12	23	11
13	23	10
15	23	8
44	23	21
46	23	23
		<u>88</u>

$$MAD = \frac{88}{6}$$

$$MAD = \underline{14.\overline{6}}$$

Answer the following:

1. The Wagner Family had the same mean age but had a MAD of 32.5.

- Which family had more variability in their ages? How do you know?

The Wagner family because the higher the MAD the more spread out the data is → higher variability.

- What does it mean to have more variability in the ages of the family members?

There is a greater distance between the ages. There is a greater range of ages.

- Why might one family have greater variability in age than other families?

Grandparents may live in the same house as their grandchildren thus increasing the variability in ages.