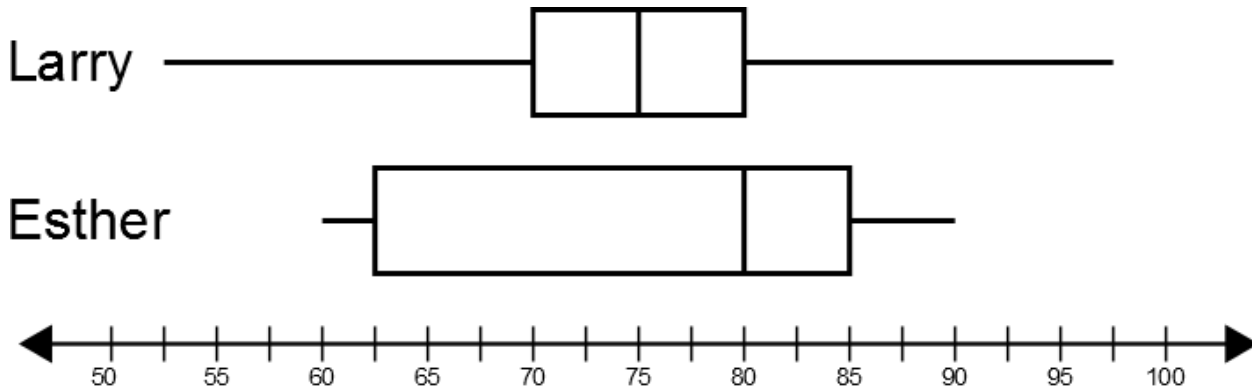


8A Review Day 9

The box plot below displays the distribution of scores that Larry and Esther earned on the 20 math tests they each took this year. Use it to answer the questions below. Make sure you explain each of your answers.



On how many tests did Larry earn a B or above?

What was Esther's highest test score?

Who had more scores between 70 and 80?

Who had more scores above 80?

How many times did Esther earn an A?

How many times did Larry fail?

75% of Larry's scores were at least what grade?

Whose test scores were more consistent?

Overall, who performed better on math tests over the course of the year?

Solve each system of equations.

$$10x - 14y = 70$$

$$-2x + 2y = -26$$

$$x = -\frac{8}{5}y - 11$$

$$y = 5x + 10$$

Write equations for an arithmetic sequence with $f(5) = -90$ and for a geometric sequence with $g(6) = 192$.

Fill in the missing spots in each table so that $f(x)$ is a function and $g(x)$ is not a function.

x	$f(x)$
-1	
	-8
6	

x	$g(x)$
-1	
	-8
6	

Esther solved the equation below. Explain the error that Esther made. Then, solve the equation correctly.

$$8(3x-7) = -6(x+7) + 4$$

$$24x - 56 = -6x - 42 + 4$$

$$24x - 56 = -6x + 46$$

$$30x = 102$$

$$x = \frac{17}{5}$$

Larry measures the distance a toy car has traveled after different amounts of time. His data is shown below.

Time (seconds)	Distance (meters)
5	1.0
6	1.2
7	2.4
8	3.3
9	3.7
10	11.0
11	4.2
12	3.7
13	4.8
14	4.5
15	4.9

Larry thinks that the 10 second and 11.0 data point is an outlier, so he decides to remove it from the data set. Which of the following quantities will change when he does so?

- mean of the time
- mean of the distance
- median of the time
- median of the distance
- range of the time
- range of the distance

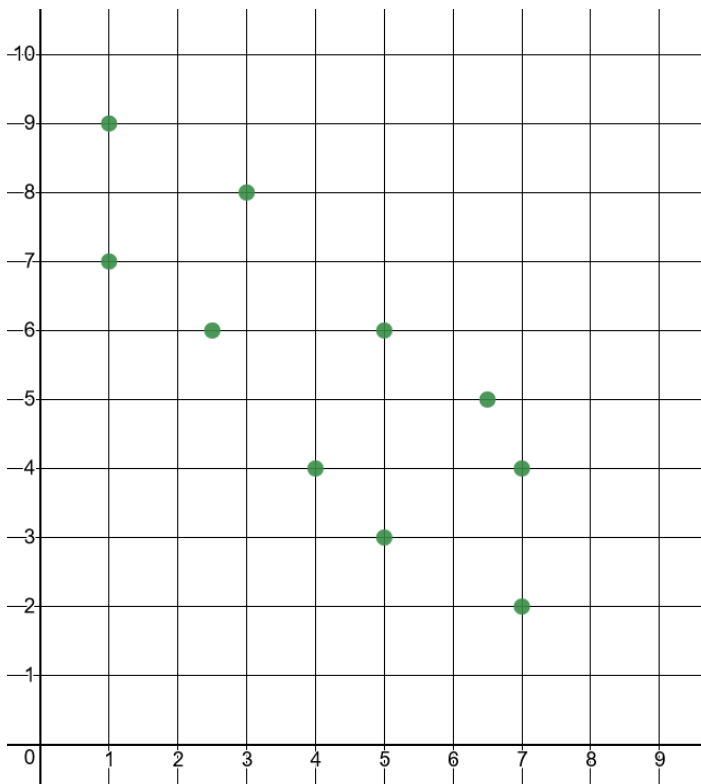
Uncle Basil has at most \$30 to spend on turnips and socks. Turnips cost \$4 each, and socks cost \$2 each. Write an inequality expressing the possible combinations of turnips and socks that Uncle Basil can buy.

A vertical line and a horizontal line intersect at the point $(-3, 16)$. Write an equation for each line.

A linear model shows that the relationship between the number of grocery items purchased and the total cost of the grocery bill has a correlation coefficient of 0.97. Which statement about the variables is true?

- Purchasing more items causes a higher cost of the grocery bill.
- If a grocery bill has a higher cost, then more items must have been purchased.
- There is no relationship between the number of items purchased and the total cost of the grocery bill.
- There is a strong relationship between the number of items purchased and the total cost of the grocery bill.

Which of the following lines would be the best fit for the scatter plot below?



$y = -\frac{3}{4}x + 10$

$y = -x + 10$

$y = -\frac{1}{2}x + 10$

$y = -\frac{3}{2}x + 10$

Instead of talking to the other guests at a party, the socially awkward Mr. Carlson decides to measure the volume of tasty fruit punch left in the punch bowl as the party progressed. His data is shown below.

Minutes	Punch Volume (Liters)
1	50
2	46
3	41
4	43
5	38
6	34
7	37
8	30
9	28
10	27

Write the equation of the linear regression function.

What do x and y represent in the equation?

What do the slope and the y -intercept mean in the context of the problem?

What is r for this data set? Interpret this correlation coefficient in the context of the problem.

Use the equation to predict the amount of fruit punch remaining after 15 minutes.

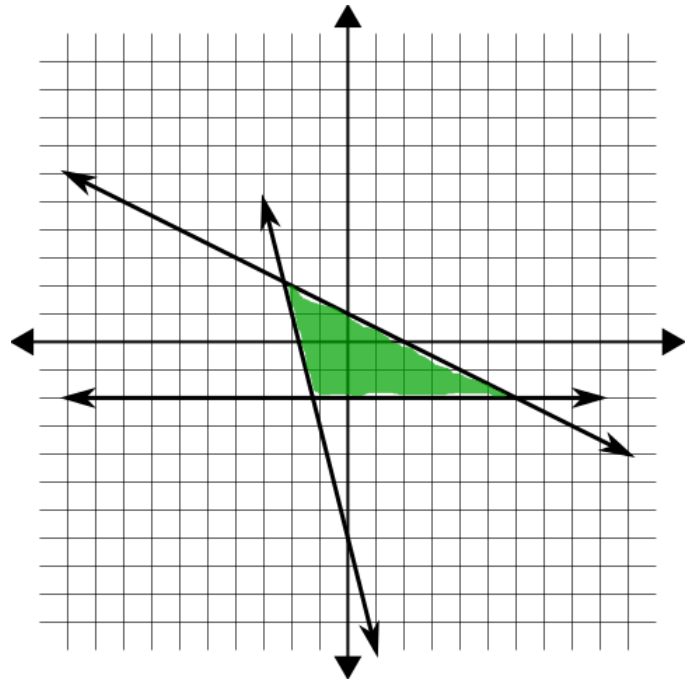
Use the equation to predict when there will be no punch left.

How much punch will be left after a half-hour? Explain your answer.

Mrs. Streitman captured a bunch of animals, weighed them, and measured their top speeds. She found no correlation between these two variables. Which of the following should she conclude?

- An animal's weight generally has nothing to do with its speed.
- The more an animal weighs, the higher its top speed will be.
- The more an animal weighs, the lower its top speed will be.
- The less an animal weighs, the higher its top speed will be.

Write a system of inequalities that would give this graph.



Margaret surveyed one hundred households about their magazine subscriptions. Her data is shown below.

Number of Subscriptions	Number of Households
0	11
1	14
2	25
3	22
4	18
5	6
6	4

Determine the median number of subscriptions per household.

Determine the mean number of subscriptions per household.

Determine the mean, median, and standard deviation of the following data set: $\{-3, 12, 0, 2, -1, 2, 14, -9, 6\}$.