Ready, Set, Go!

Ready

Topic: Finding distances and averages.

The graph below has several points and shows the line **y=x** use this graph to answer each question.

1. The vertical distance between *point N* and the line **y=x** is labeled on the graph. Find all of the vertical distances between the points and the line $y = x$.
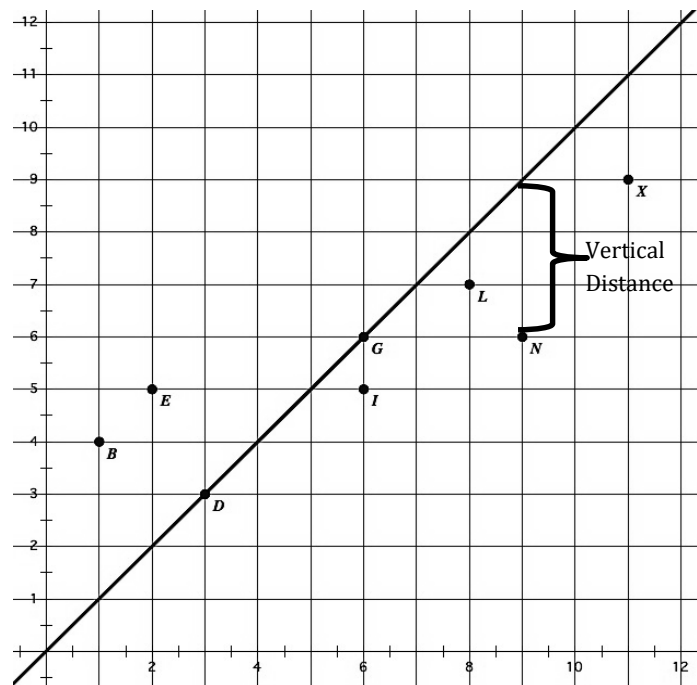
B:

D:

E:

G:

I:

L:

N:

X:

2. What is the *sum of all the distances* that the points are away from the line **y=x**?

3. What is the *average vertical distance* that any of the points are away form the line **y=x**?

4. Is the line on the graph the line of best fit? Explain why or why not. If it is not the best then draw a line that is better fit to the data.

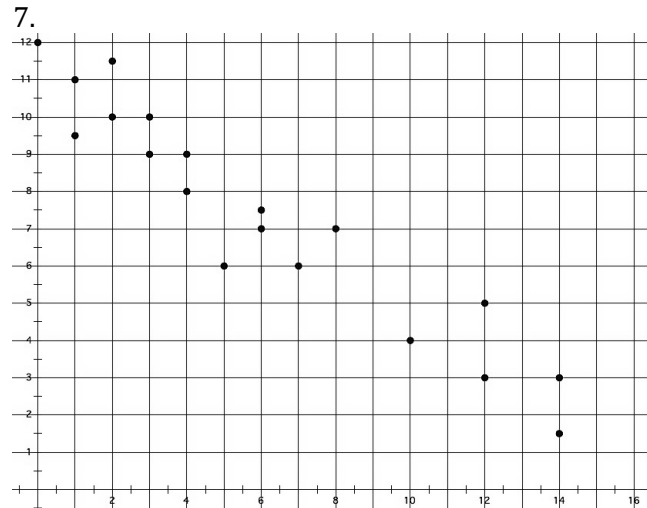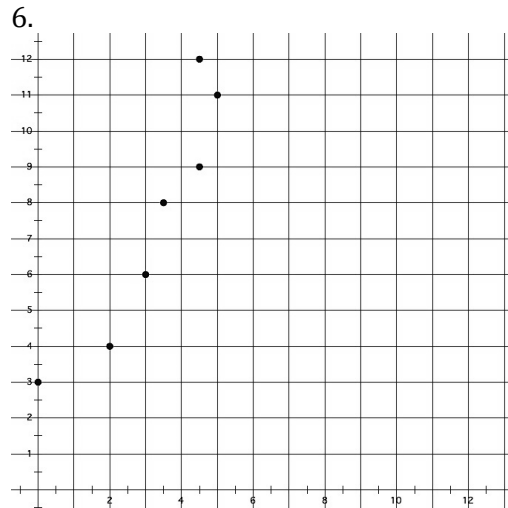5. Estimate the correlation coefficient for this set of data points.
If you have a way to calculate it exactly then do so. (Using a graphing calculator or data software.)
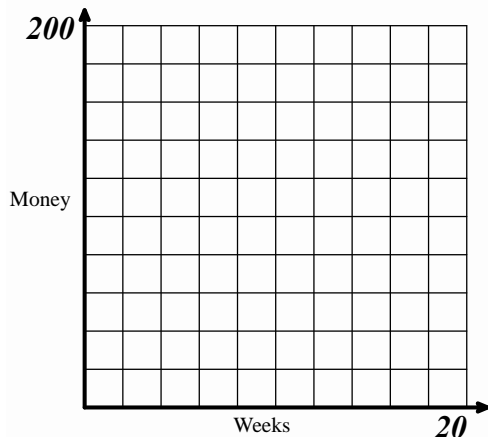
Set

Topic: Creating and analyzing scatter plots.

Determine whether a linear or an exponential model would be best for the given scatter plots. Then sketch a model on the graph that could be used to make predictions.

6.

7.

8a. Use the data to make a scatter plot.

Weeks since school started	Money in savings
1	200
3	175
4	162
7	120
10	87
13	57
20	5

b. Is the correlation of the graph positive or negative? Why?

c. What would you estimate the correlation coefficient to be? Why? (If you have a calculator or software that can calculate it precisely then do so.)

d. Create a regression line and find the regression equation. What is the regression equation?

e. What does the slope of the regression equation mean in terms of the variables?

f. Most school years are 36 weeks. If the rate of spending is kept the same how much more money needs to be saved during the summer in order for there to be money to last all 36 weeks.

Go

Topic: Data and statistics, when to use two way tables when to use scatter plots.

9. In what situations does it make the most sense to use a two-way table and look at residual frequencies to make decisions or conclusions?

10. In what situations does it make the most sense to use a scatter plot and a linear or exponential model to analyze and make decisions or draw conclusions?

For each of the representations below label as a *function, not a function.* If, not a function say why. If it is a function then label as *linear, exponential or neither*.

11.

x	f(x)
0	5
1	169
2	333
3	497

12.

X	Y
1	15
2	25
3	15
2	30

13.

x	h(x)
2	5
3	10
4	20
5	40

14. $g(x) = 4 - 12x$

15. $s(t) = 3 \cdot 4^{t-1}$

16. The amount of medicine in the blood stream of a cat as time passes. The initial dose of medicine is 80mm and the medicine brakes down at 35% each hour.

17.

Time	0	1	2	3	4
Money in Bank	250	337.50	455.63	615.09	830.38