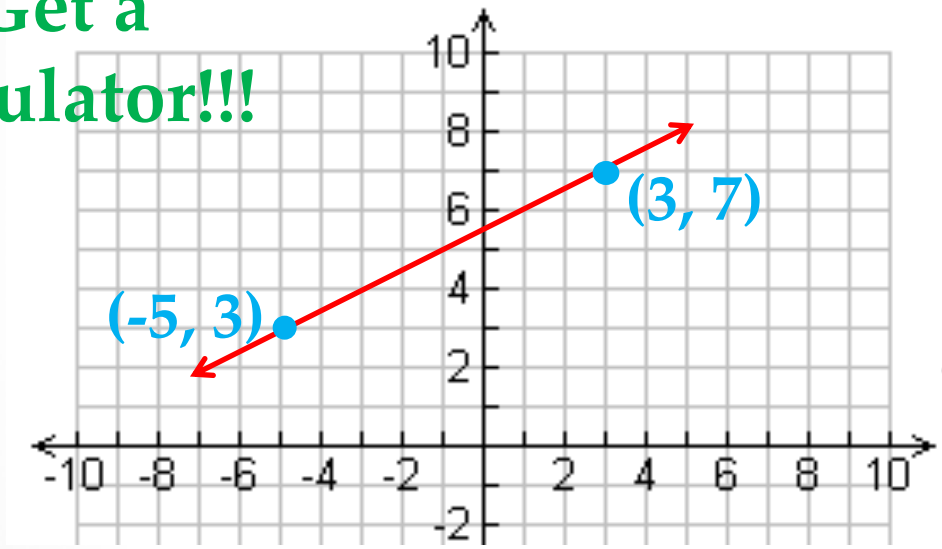
Created by: Mr. Lischwe

Warmup 4/(2!)

1) Find the equation of the line in the form y = mx + b.

Get a calculator!!!



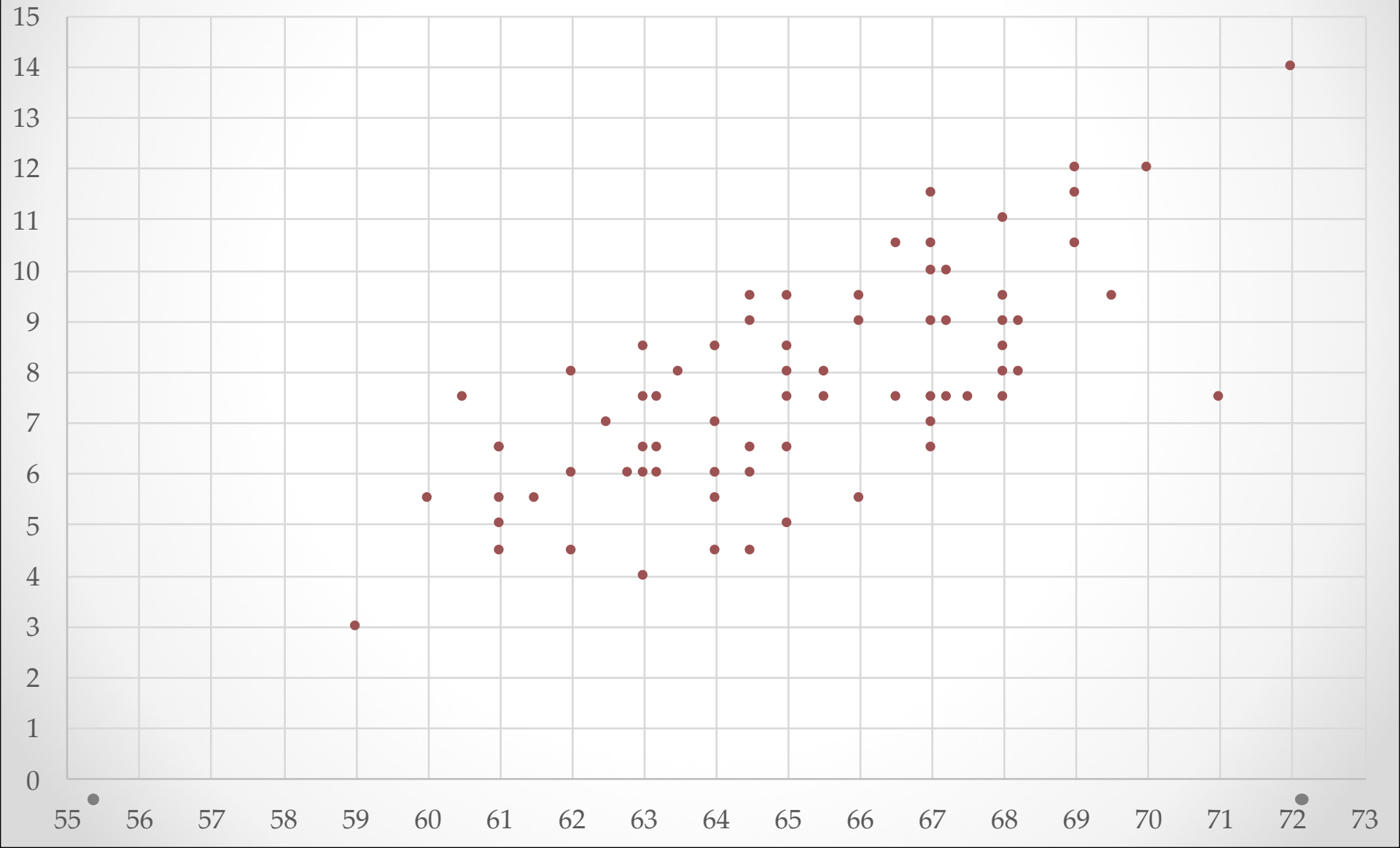
$\text{slope} = \frac{7-3}{3-(-5)} = \frac{4}{8} = \frac{1}{2}$

$y = \frac{1}{2}x + 5.5$

2) What kind of correlation do you expect in our height vs. shoe size scatter plot? (Positive, negative, or no correlation? Strong, moderate, or weak?) Explain why you chose what you chose.

Calculators…

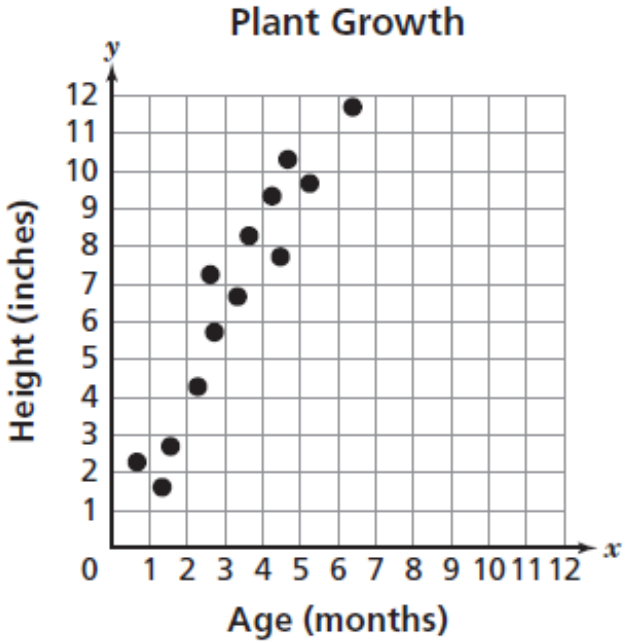
Height vs. Shoe Size Scatter Plot



Line of Best Fit Application

- http://illuminations.nctm.org/Activity.aspx?id=4186

41 A group of students each measured the growth of a group of plants at different ages. The results are shown in the scatterplot below.



Which conclusion about the growth rate of the group of plants is best supported by the data?

A The plants grew about 2 inches per month.

B The plants grew about 3 inches per month.

C The plants grew about 4 inches per month.

D The plants grew about 6 inches per month.

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B The plants grew about 3 inches per month.

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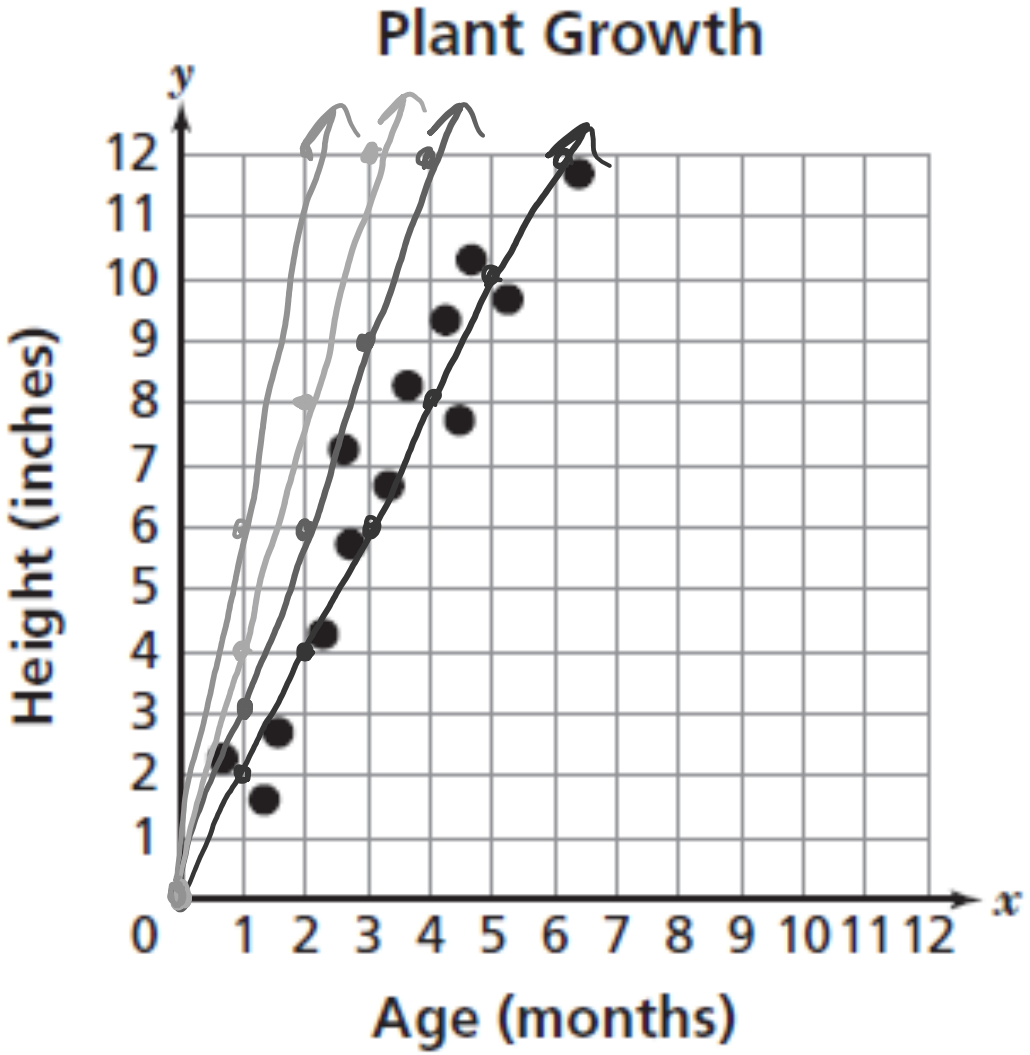
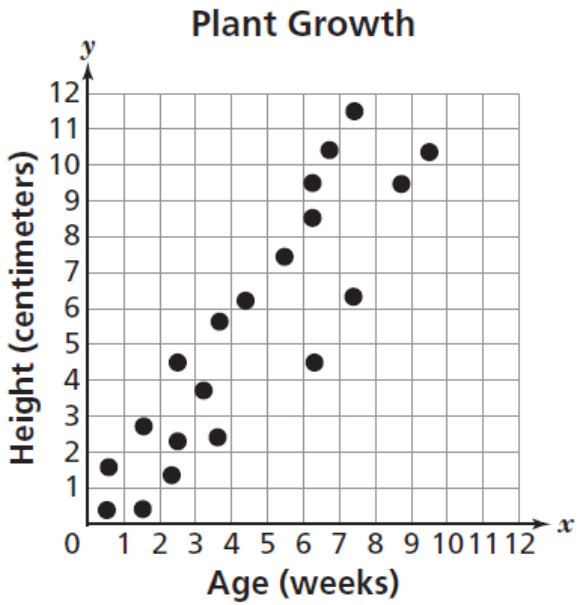
D The plants grew about 6 inches per month.



14 The ages and heights of a number of different plants of the same species are recorded on the scatterplot.



Which equation represents a line of best fit for this scatterplot?

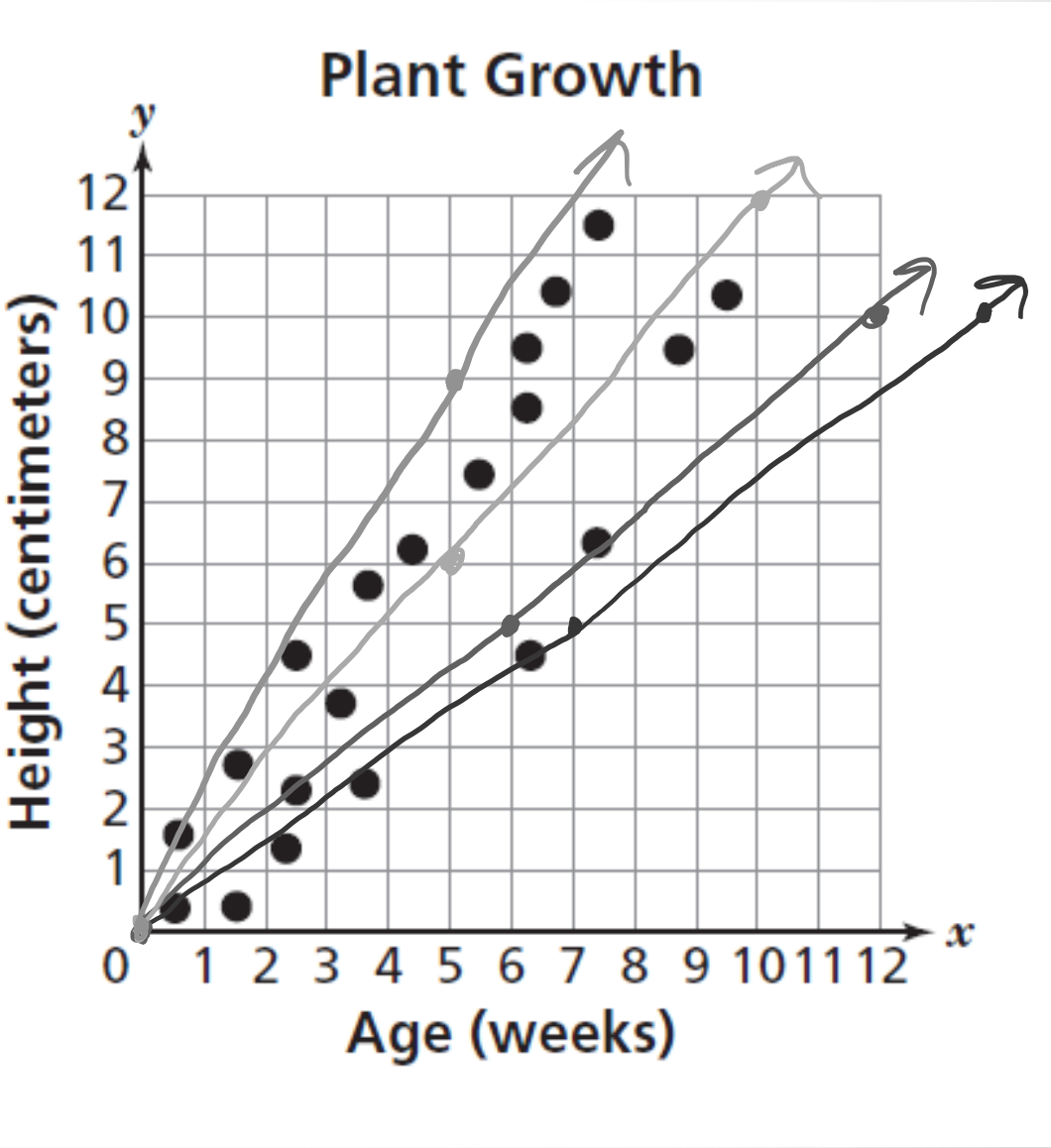
F $y = \frac{5}{7}x$

G $y = \frac{5}{6}x$

H $y = \frac{6}{5}x$

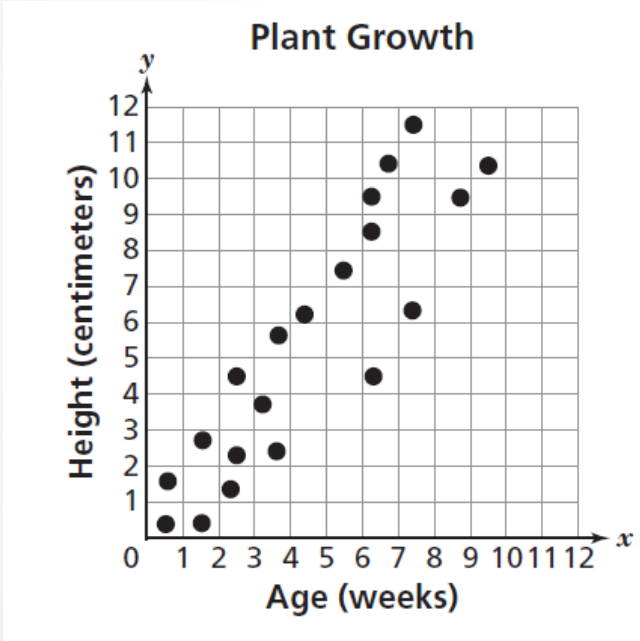
J $y = \frac{9}{5}x$

- **F** $y = \frac{5}{7}x$
- **G** $y = \frac{5}{6}x$
- **H** $y = \frac{6}{5}x$
- **J** $y = \frac{9}{5}x$



$$y = \frac{6}{5}x$$

- What does the slope mean???



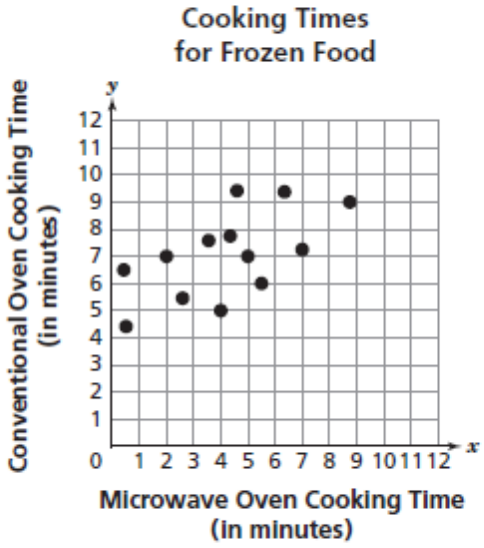
- **The plants grow about 6 centimeters every 5 weeks**

OR

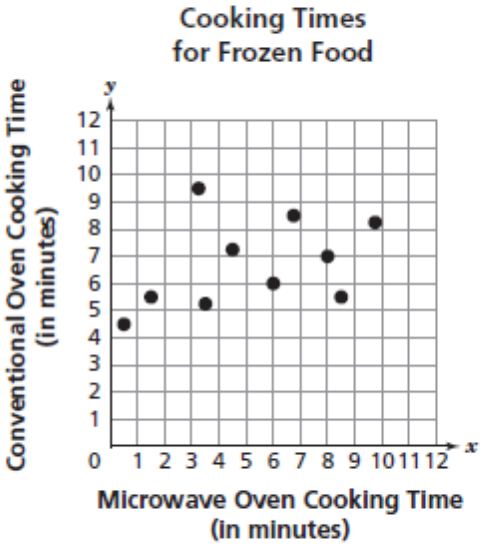
- **The plants grow about 6/5 or 1.2 centimeters in one week**

44 A food manufacturer compared the cooking times for different frozen foods in a microwave oven (x) to the cooking times in a conventional oven (y). A line of best fit for the data collected is $y = 0.5x + 5$. Which scatterplot best represents this set of data?

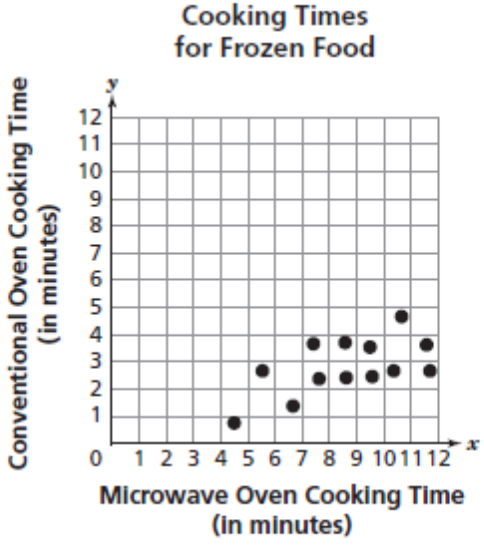
F



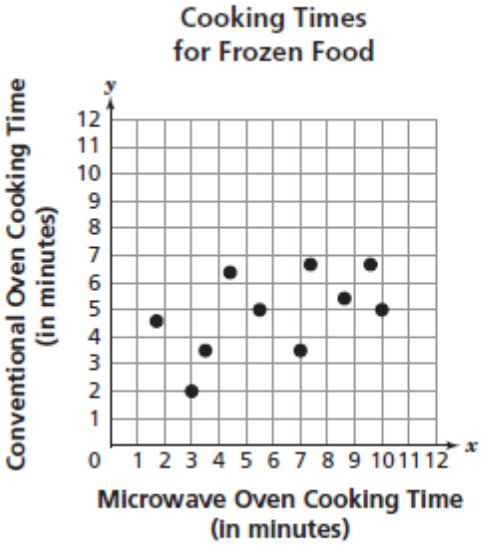
H



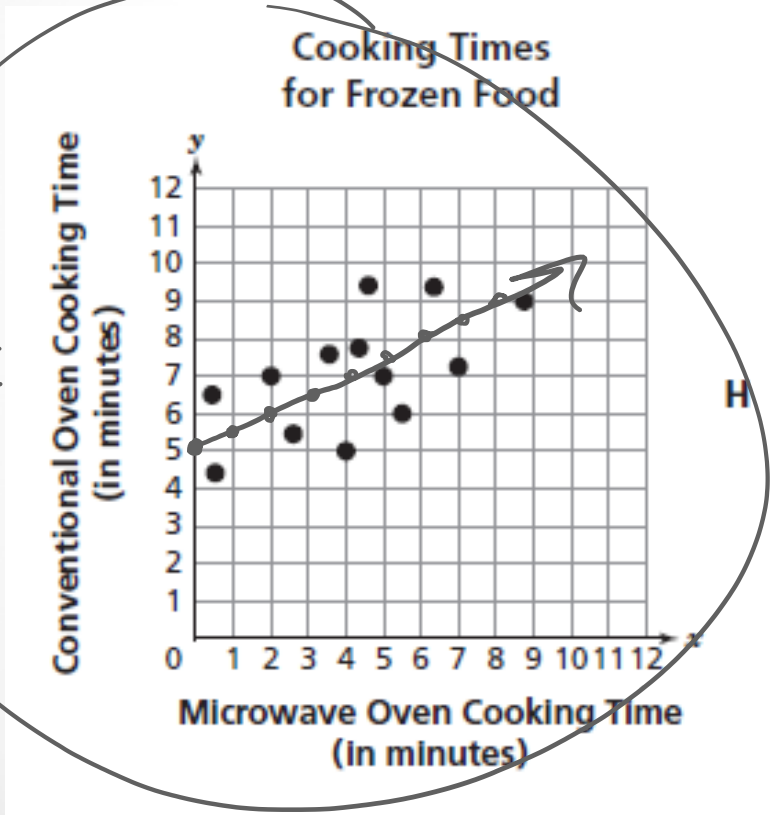
G

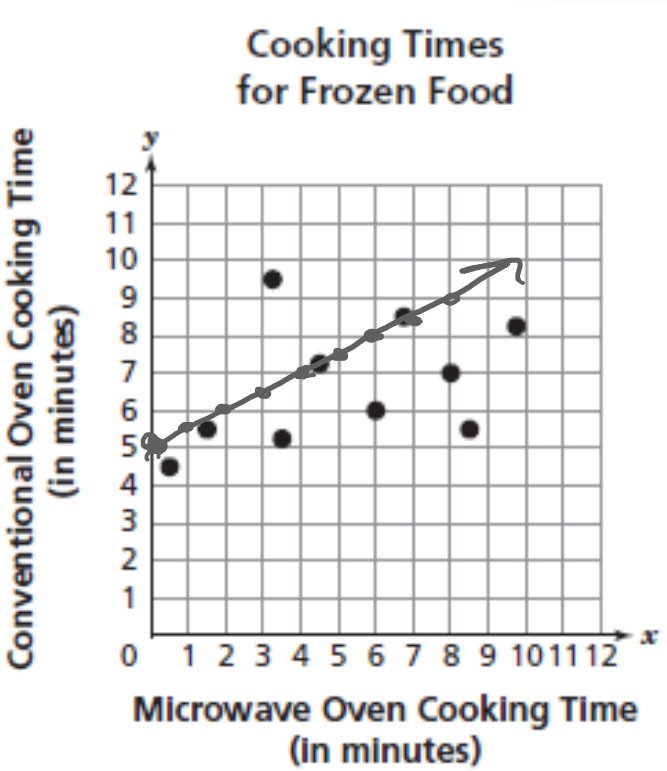


J



$y = 0.5x + 5$


Cooking Times
for Frozen Food
Conventional Oven Cooking Time
(in minutes)
Microwave Oven Cooking Time
(in minutes)
y
x
0 1 2 3 4 5 6 7 8 9 10 11 12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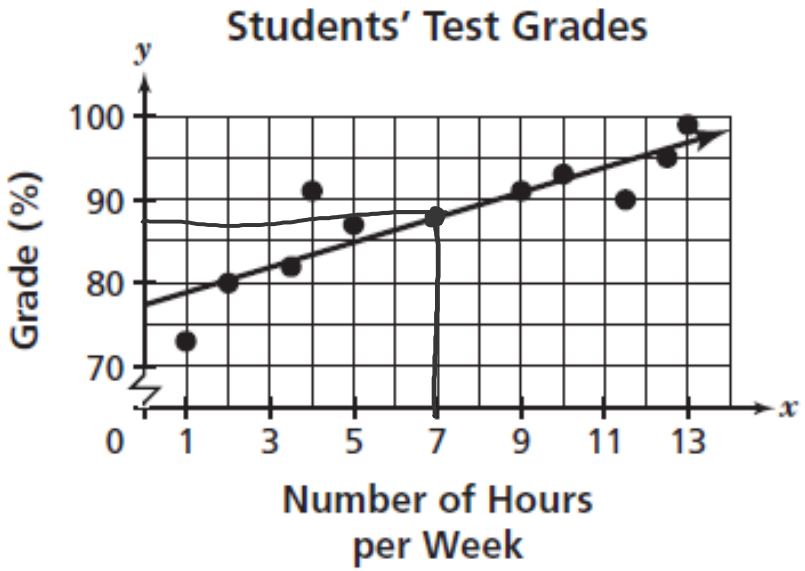
y
x
0 1 2 3 4 5 6 7 8 9 10 11 12

16 The scatterplot below shows the relationship between the test grades for 10 students and the numbers of hours they studied per week.



Based on the scatterplot, which is the best prediction of the test grade for a student who studied for 7 hours?

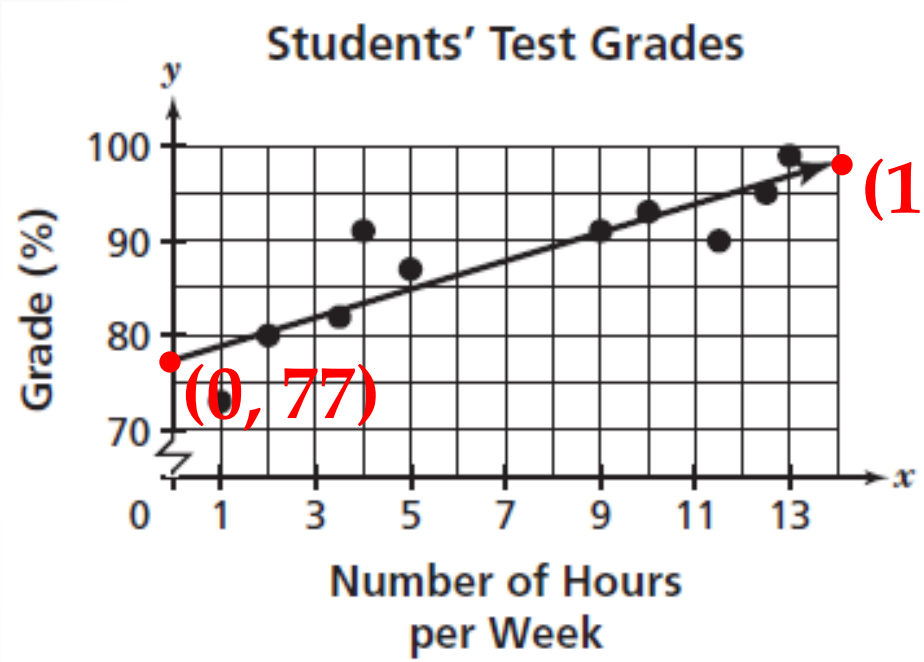
F 98%

G 91%

H 88%

J 82%

What is the slope, and what does it mean?



$$\text{Slope} = \frac{98-77}{14-0}$$

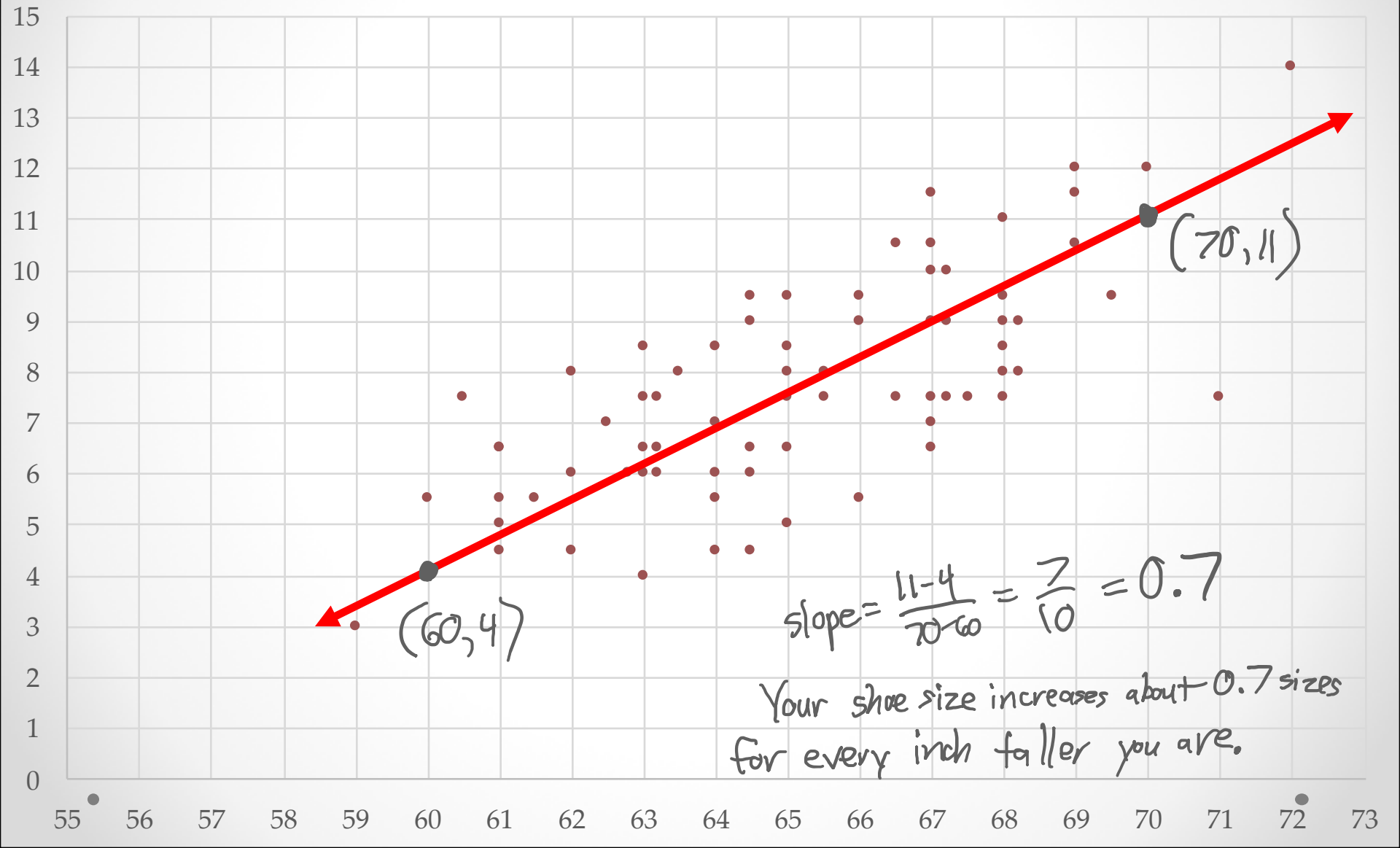
$$\text{Slope} = \frac{21}{14}$$

- Slope is about 1.5.
- Your grade would be expected to go up 1.5 percent for each hour spent studying.

How to find the slope of a line of best fit

- **Draw two NEW points on the line of best fit that are far apart and estimate their coordinates.**
- **Use $\frac{y_2-y_1}{x_2-x_1}$ to find the slope.**

Height vs. Shoe Size Scatter Plot



HOMEWORK

- Olympic Scatter Plot + Line of Best Fit Worksheet