CW 4.2.2: Scatterplots and Line of Best Fit   Name: _____
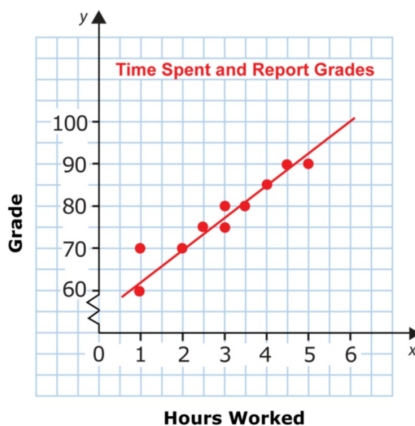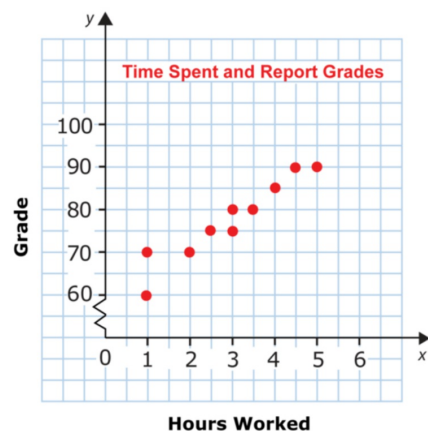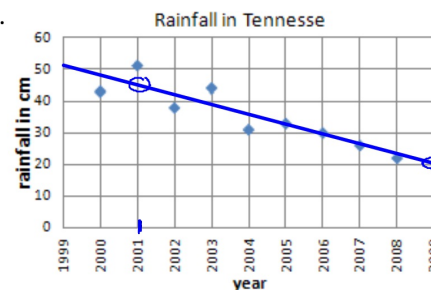
Line of best fit- A straight line drawn on a scatterplot that summarizes the trend in a set of data. It should be drawn so about half the points are above the line and the other half are below the line. Except for outliers, most of the points should be close to the line.
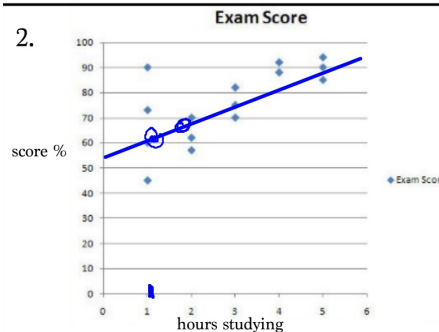
Time Spent and Report Grades

Hours Worked

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Hours Worked

1.

Rainfall in Tennesse

a. Does the graph have a positive, (negative) or no correlation?

b. Draw in a line of best fit on the scatterplot.

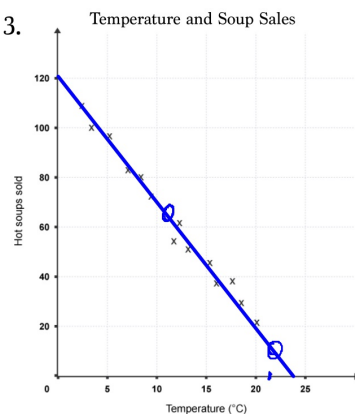c. Use your line of best fit to predict the rainfall in
2001: 45cm
2009: 20 cm

2.

Exam Score

a. Does the graph have a (positive,) negative or no correlation?

b. Draw in a line of best fit on the scatterplot.

c. Use your line of best fit to predict the exam score of a student who studied
1 hour: 60%
1.5 hours: 64%

3.

Temperature and Soup Sales

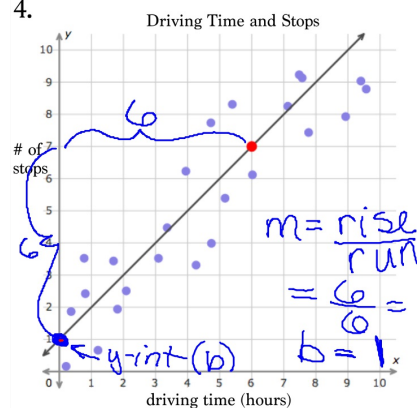a. Does the graph have a positive, (negative) or no correlation?

b. Draw in a line of best fit on the scatterplot.

c. Use your line of best fit to the number of hot soups sold if the temperature is:

22°C - 18

11°C- 64

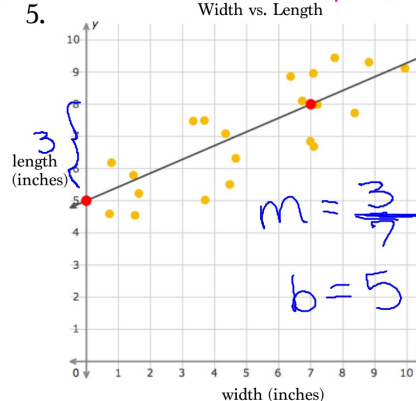Writing the equation of the line of best fit can help us make predictions based on the data given.

$\frac{3}{7} \cdot \frac{14}{1} = \frac{3}{1} \cdot \frac{2}{1} = 6$

4.

Driving Time and Stops

$m = \frac{rise}{run}$

$= \frac{6}{6} = 1$

y-int (b)

b = 1

Write the equation of the line of best fit in slope intercept form: $y = 1x + 1$

$y = mx + b$

Use your equation to predict the number of stops you might make if you drive for 12 hours.

$y = 1(12) + 1 = 13$ stops

5.

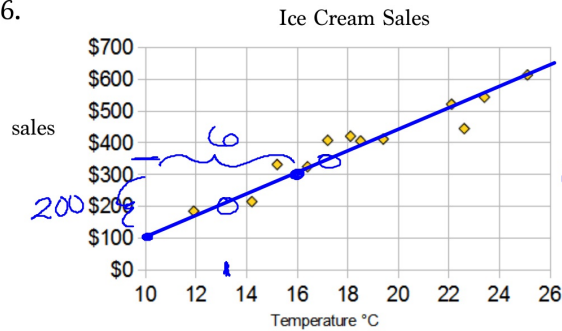**Width vs. Length**

$m = \frac{3}{7}$

$b = 5$

Write the equation of the line of best fit in slope intercept form: $y = \frac{3}{7}x + 5$

Use your equation to predict length of an object that is 14 inches wide.

$y = 3/7 (14) + 5 = 6 + 5 = 11$ in

6.

Ice Cream Sales

$m = \dfrac{200}{6} = \dfrac{100}{3}$

a. Does the graph have a ⟨positive⟩, negative, or no correlation? _____

b. Draw in the line of best fit on the scatterplot above.

c. Write the equation of the line of best fit in slope intercept form: $y = \dfrac{100}{3}x + 100$

d. Use your line of best fit to predict ice cream sales when the temperature is 13⁰. $200 (x)$

e. Use your line of best fit to predict the temperature when ice cream sales are $350. $17^0 (y)$

f. Use your equation to predict ice cream sales when the temperature is 30⁰. $1100 (x)$
   $y = \dfrac{100}{3}(30) + 100 = 1000 + 100 = 1100$
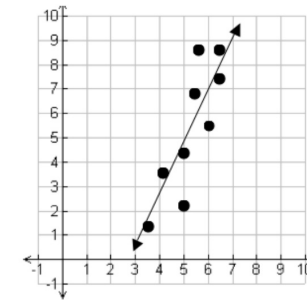

7.
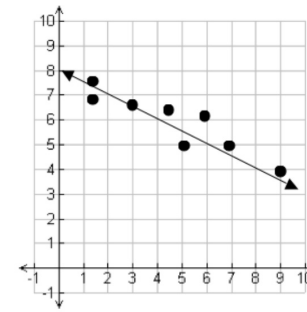
Which equation best fits the data?

a. $y = \frac{1}{2}x + 8$

b. $y = -\frac{1}{2}x + 8$ ⟨circled⟩

c. $y = -5x - 6$

d. $y = 3x - 8$

8.

Which equation best fits the data?

a. $y = -\frac{1}{2}x$

b. $y = \frac{3}{4}x + 5$

c. $y = 2x + 2$

d. $y = 2x - 5$ ⟨circled⟩