Reminders:

. Unit Test (Ch. 4 & 5 & 6.7) - Thursday, 4/5

. Last day of the quarter is Thursday, 4/12

. Last day for make-up work (excused!) is Monday, 4/9

$2x + 3y = 6$

$-2x \quad -2x$

$\frac{3y}{3} = \frac{-2x}{3} + \frac{6}{3}$

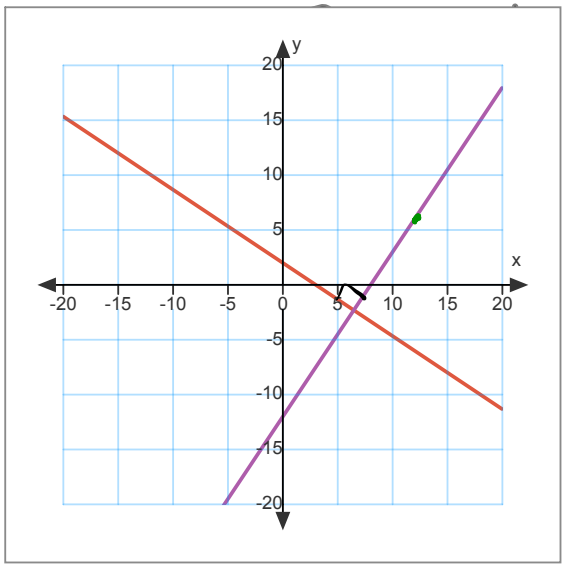
Equation that is perpendicular

and goes through the point $(2, 6)$

$y = mx + b$

$y = \frac{-2}{3}x + 2$ (original)

Slope of new line $-\left(\frac{-3}{2}\right) = \frac{3}{2}$

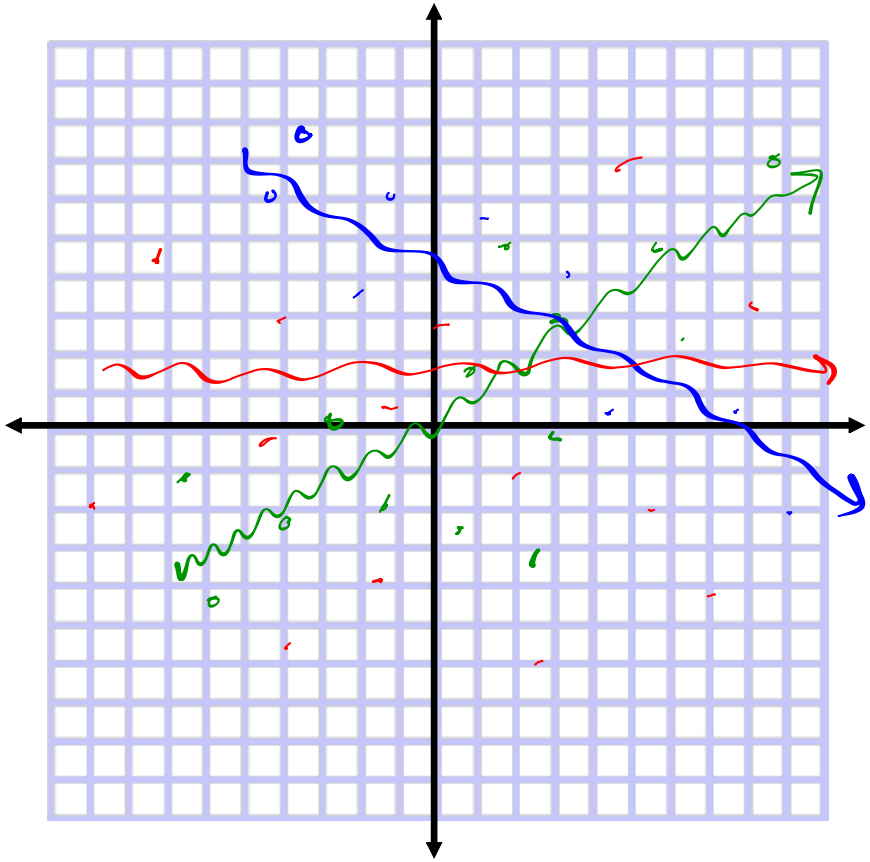


$+b$

$$y = \frac{3}{2}x + (-12)$$

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

Fitting a line to data:



Scatter plot – Dots on a graph

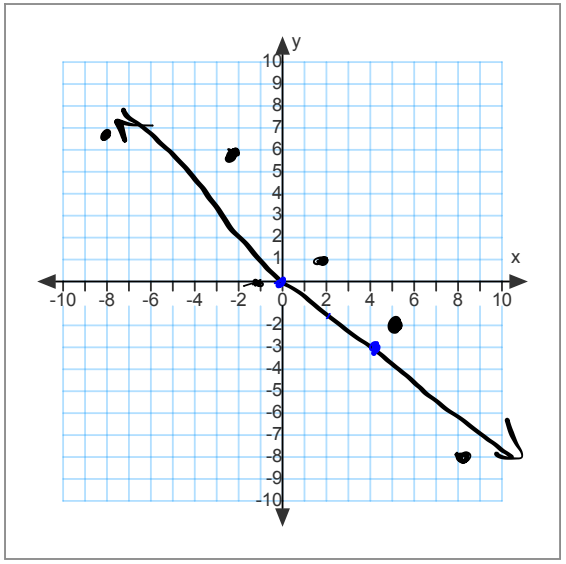
Data can show trends – when the dots seem to make a line

Positive Correlation (positive slope) – line goes up and to the right

Negative Correlation (negative slope) – line goes down and to the right

No Correlation (slope = 0 or und.) horizontal or Vertical line

Estimate Best Fit:



Make a scatter plot ✓

Draw a line that has roughly equal numbers of points above and below ✓

Pick two points on the line and write an equation

(0,0) (4,-3)

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$= \frac{-3 - 0}{4 - 0}$

$m = \frac{-3}{4}$

X	Y
5	-2
8	-8
2	1
-2	6
-8	7
-1	0

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

$-3 = \frac{-3}{4}(4) + b$

$-3 = -3 + b$

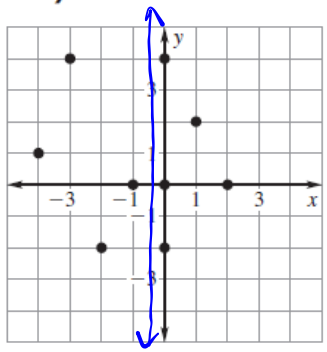
$+3 \quad +3$

$0 = b$

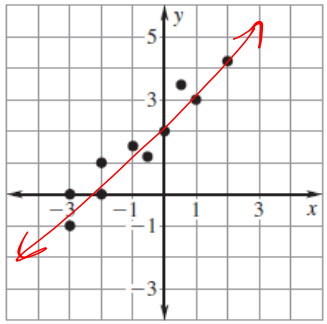
$y = \frac{-3}{4}x$

Tell whether *x* and *y* show a *positive correlation*, a *negative correlation*, or *relatively no correlation*. AND - find the equation of the line!

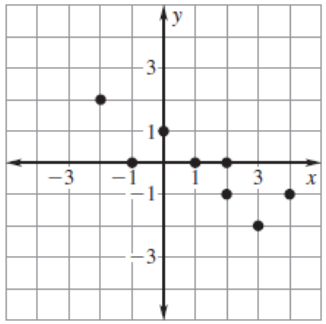
1.



2.



3.



No correlation

positive corr.

$(-2,0)\ (-3,-1)$

$y=x+b$

$-1=-3+b$

$+3\ \ +3$

$2=b$

$y=x+2$

$m=\frac{y_2-y_1}{x_2-x_1}$

$m=\frac{0-(-1)}{-2+3}$

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

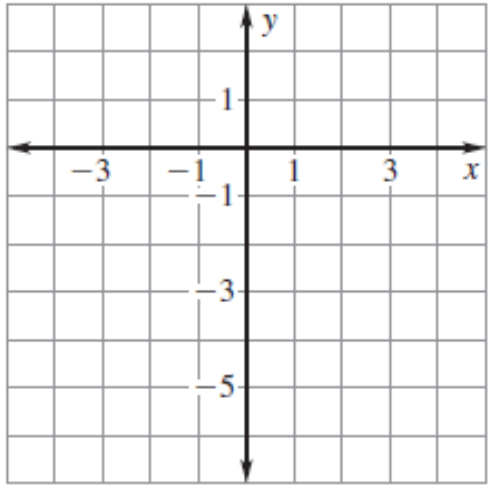
$0=-2+b$

$+2\ \ +2$

$2=b$

Identify the equation of a line with the best fit

x	−3	−2	−1	0	1	2
y	1	−1	0	−2	−4	−5



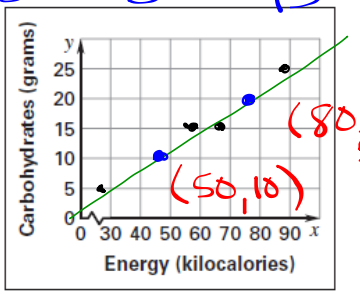
Fruits The table shows the amount of energy (in kilocalories) and the amount of carbohydrates (in grams) in a 100-gram serving of different fruits.

Fruit	Apple	Banana	Blueberries	Kiwi	Pear	Strawberries	Mango
Energy (kcal)	59	92	56	61	59	30	65
Carbohydrates (g)	15.25	23.43	14.13	14.88	15.11	7.02	17

a. Make a scatter plot of the data where x represents the energy (in kilocalories) and y represents the carbohydrates (in grams).

b. *Describe* the correlation of the data.

c. A 100-gram serving of an avocado contains 161 kilocalories of energy and 7.39 grams of carbohydrates. Does an avocado fit the trend shown by your scatter plot? *Explain* your reasoning.



$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{20-10}{80-50} = \frac{10}{30} = \frac{1}{3}$

$y = \frac{1}{3}x - 6$

$5 = \frac{1}{3}(160) - 6$

$5 = 53 - 6$

$\times\ 5 = 47$

$y = \frac{1}{3}x + b$

$20 = \frac{1}{3}(80) + b$

$20 = 26 + b$

$-26 \quad -26$

$-6 = b$

Homework:

p. 328, 3-7, 13-15, 17, 19