# Reminders:
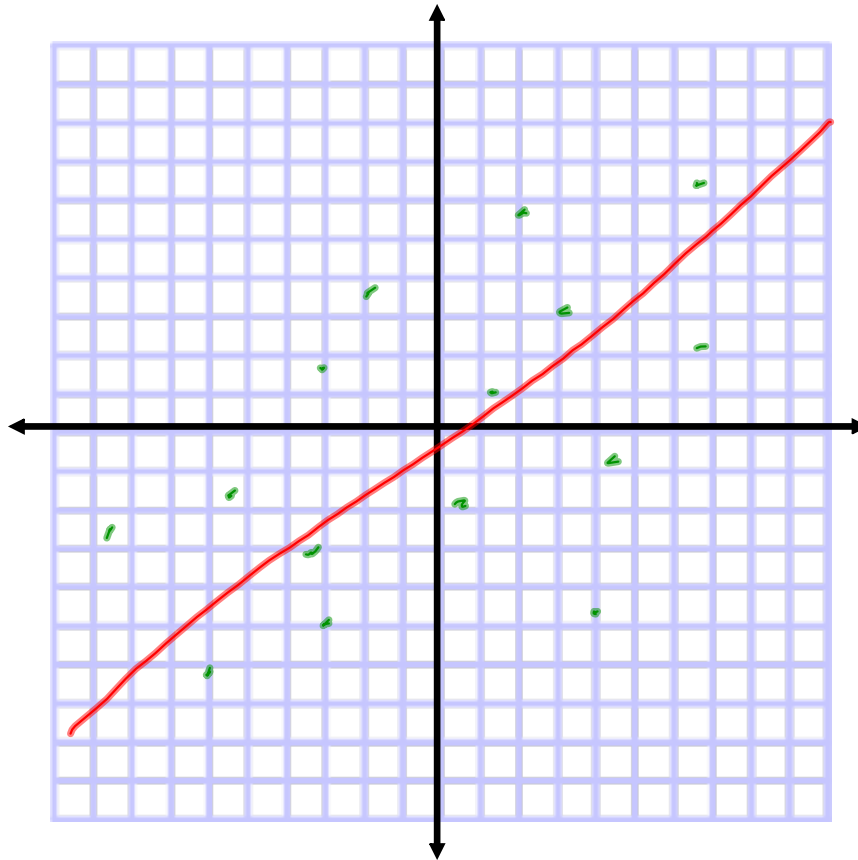
. Unit Test (Ch. 4 & 5 & 6.7) - Thursday, 10/27

. Last day of the quarter is Thursday, 11/10

. Last day for make-up work (excused!) is Monday, 11/14

# Fitting a line to data:

Scatter plot    a collection
of $(x,y)$ points plotted on
a grid
Data can show trends

VISUAL

Positive Correlation
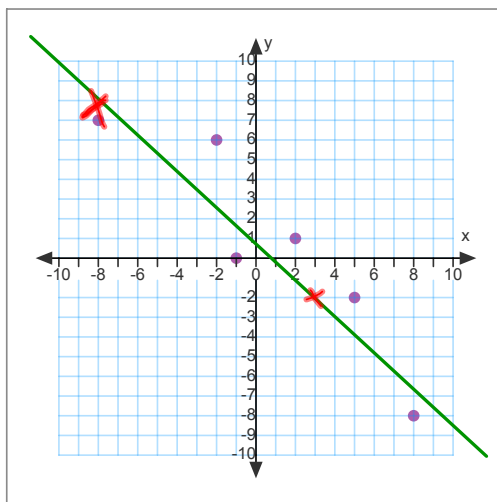
positive
slope

Negative Correlation

negative
slope

No Correlation

Slope = 0

# 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

$(3, -2)$ ①

$(-8, 8)$ ②

$M = \dfrac{y_2 - y_1}{x_2 - x_1} = \dfrac{-8 + 2}{-8 + 3} = \dfrac{10}{-11}$

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

$y = mx + b$

$-2 = m(3) + b$

$-2 = \dfrac{10}{-11}(3) + b$

$-2 = -\dfrac{30}{11} + b$

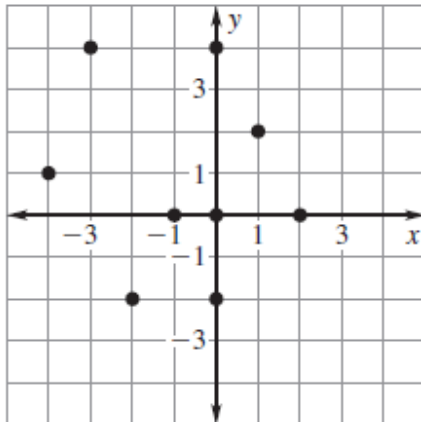$+\dfrac{30}{11} \qquad + \dfrac{30}{11}$

$\dfrac{8}{11} = b$

$\dfrac{-2}{1} + \dfrac{30}{11}$
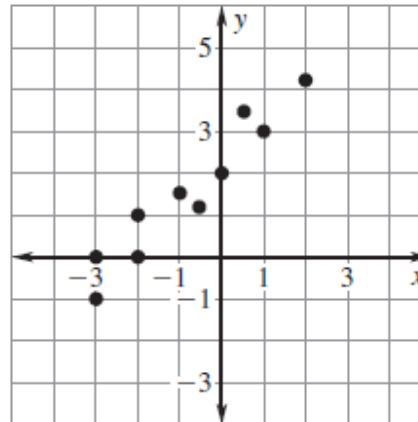
$\dfrac{-22}{11} + \dfrac{30}{11} = \dfrac{8}{11}$

$y = -\dfrac{10}{11}x + \dfrac{8}{11}$

3

Tell whether *x* and *y* show a *positive correlation*, a *negative correlation*, or *relatively no correlation*.
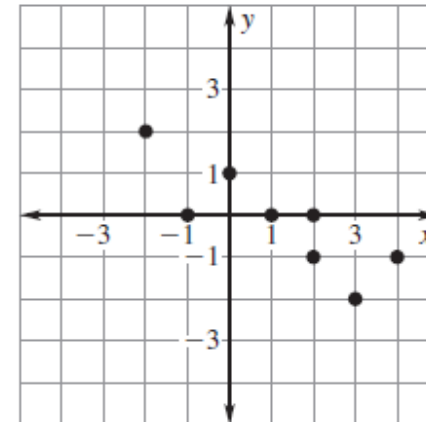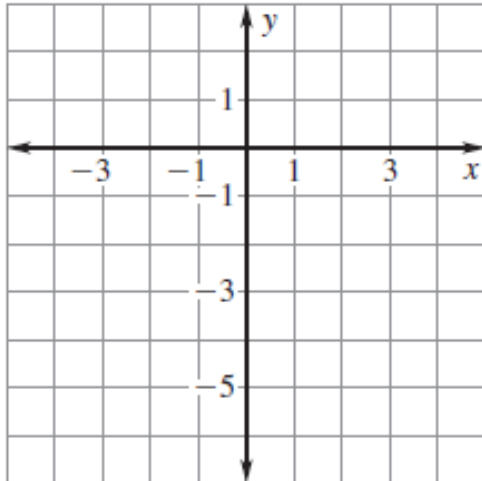
**1.**



**2.**



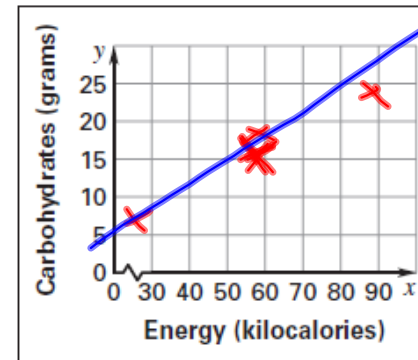**3.**

# 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) | 69 | 90 | 56 | 61 | 60 | 30 | 65 |
| Carbohydrates (g) | 15.25 | 23.43 | 14.13 | 14.88 | 15.11 | 7.02 | 15 |

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.

# Homework:

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