

# Fitting a Line to Data

CHAPTER 5 SECTION 4

## Best-Fitting Line



- Best-Fitting Line- a line that best fits that data.
- Steps for Drawing a Line of Best Fit:
  - Plot all the data points
  - Draw a line through the data with the same amount of points above and below the line
  - Pick two points that are on the line
  - Find slope
  - Use one of the points to find b
  - Write equation in slope-intercept form

## Example:

X (Forear m Length)	Y (Foot Length)
22	24
20	19
24	24
21	23
25	23
18	18
20	21

1. Plot Data
2. Draw line of best fit
3. Pick two points on the line
4. Find slope
5. Find b using one of the points
6. Write equation

$$y = mx + b$$

$$18 = 1 \cdot 18 + b$$

$$18 = 18 + b$$

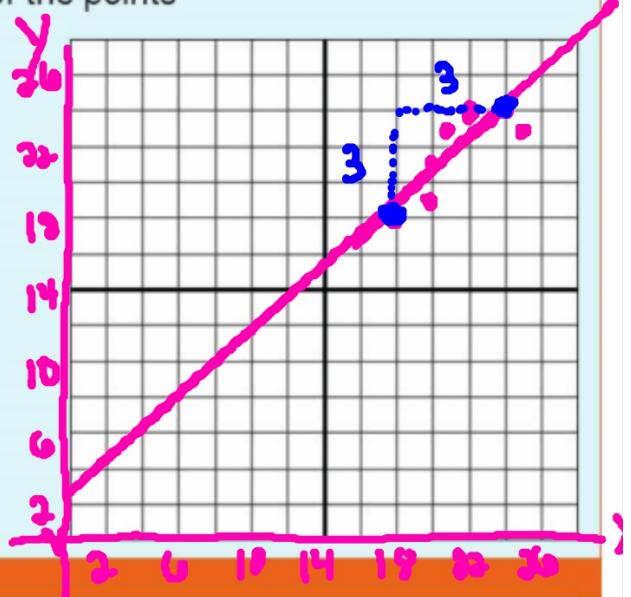
$$-18 \quad -18$$

$$0 = b$$

$$y = 1x + 0$$

$$\boxed{y = x}$$

$$m = \frac{3}{3} = 1$$



## Example:



- Robert Wadlow:
  - [http://en.wikipedia.org/wiki/Robert\\_Wadlow](http://en.wikipedia.org/wiki/Robert_Wadlow)

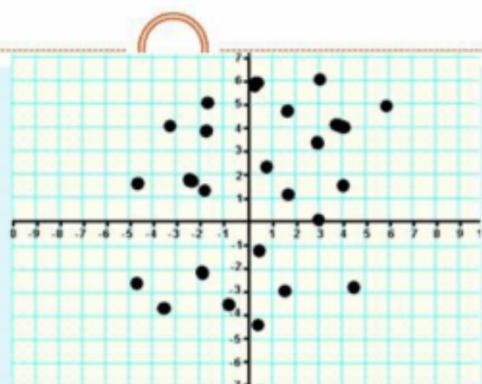
## Correlation



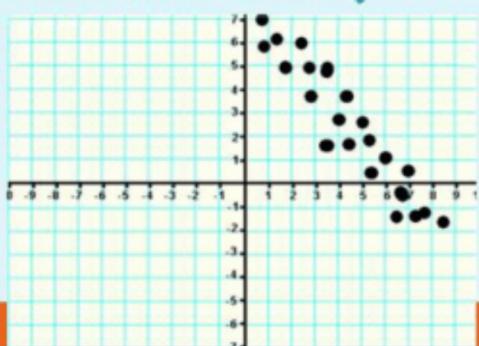
- Positive Correlation
  - y increases as x increases
- Negative Correlation
  - y decreases as x increases
- No Correlation
  - If the points show no linear pattern

## Correlation

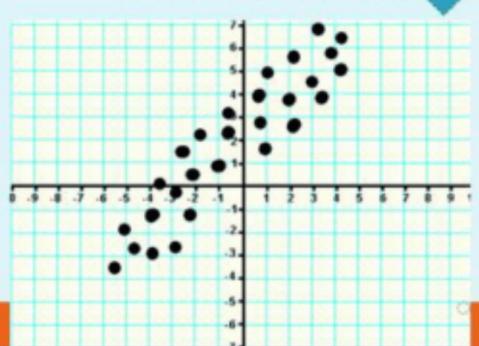
No Correlation



Negative Correlation



Positive Correlation



## Class Work



- Complete Worksheet

## Homework



- Page 296 #12-22

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Hmwk  
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