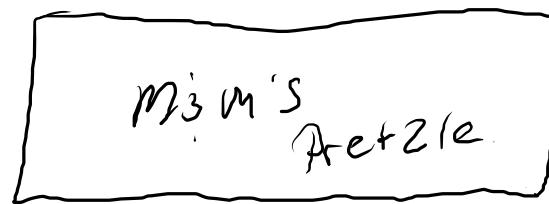


Announcements.

- ① Final Submission date 05/19 @ 11:59pm, Either gradeScope or D.B.
 - Review old exams.
- ② Exam 3 will be posted next Wednesday and due date we'll discuss.
- ③ Last Hw set is Sunday.

§ 15.2 Displaying Data



4 red M&M's

3 Blue M&M's

7 Green M&M's

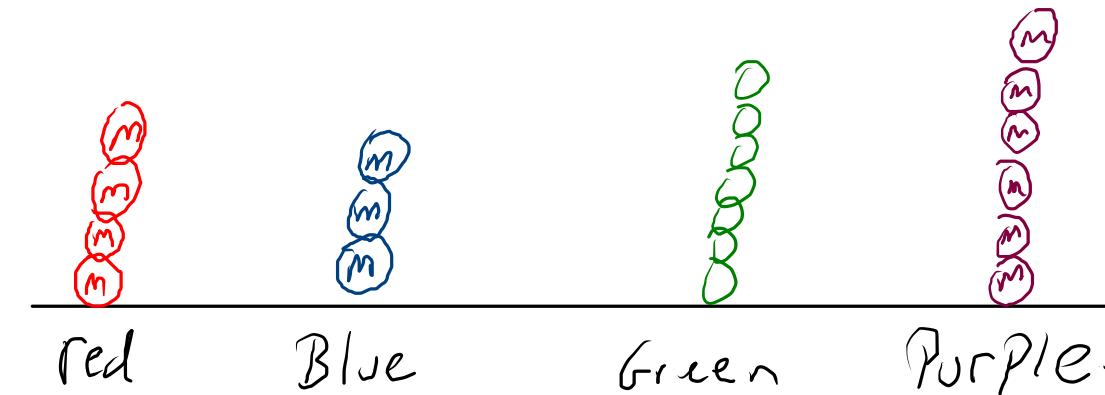
6 Purple M&M's.

20 total M&M's.

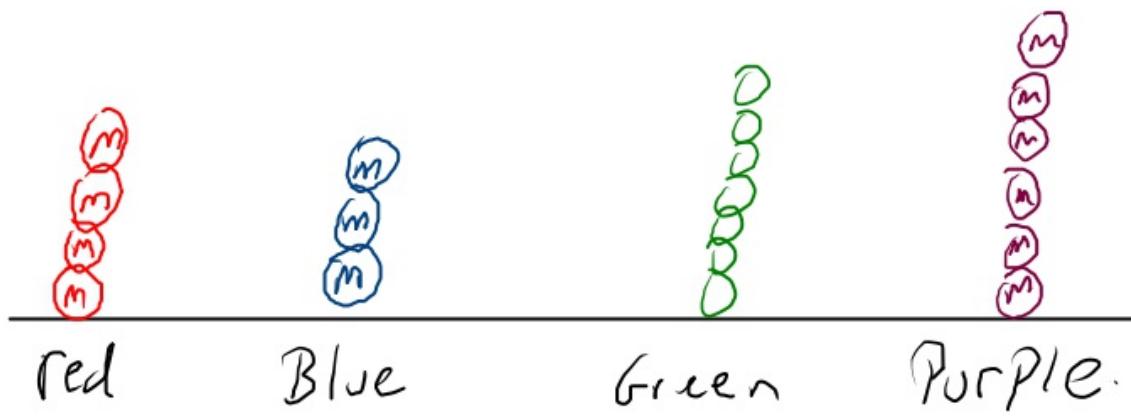
To display these data values.

① Real Graph & Pictograph

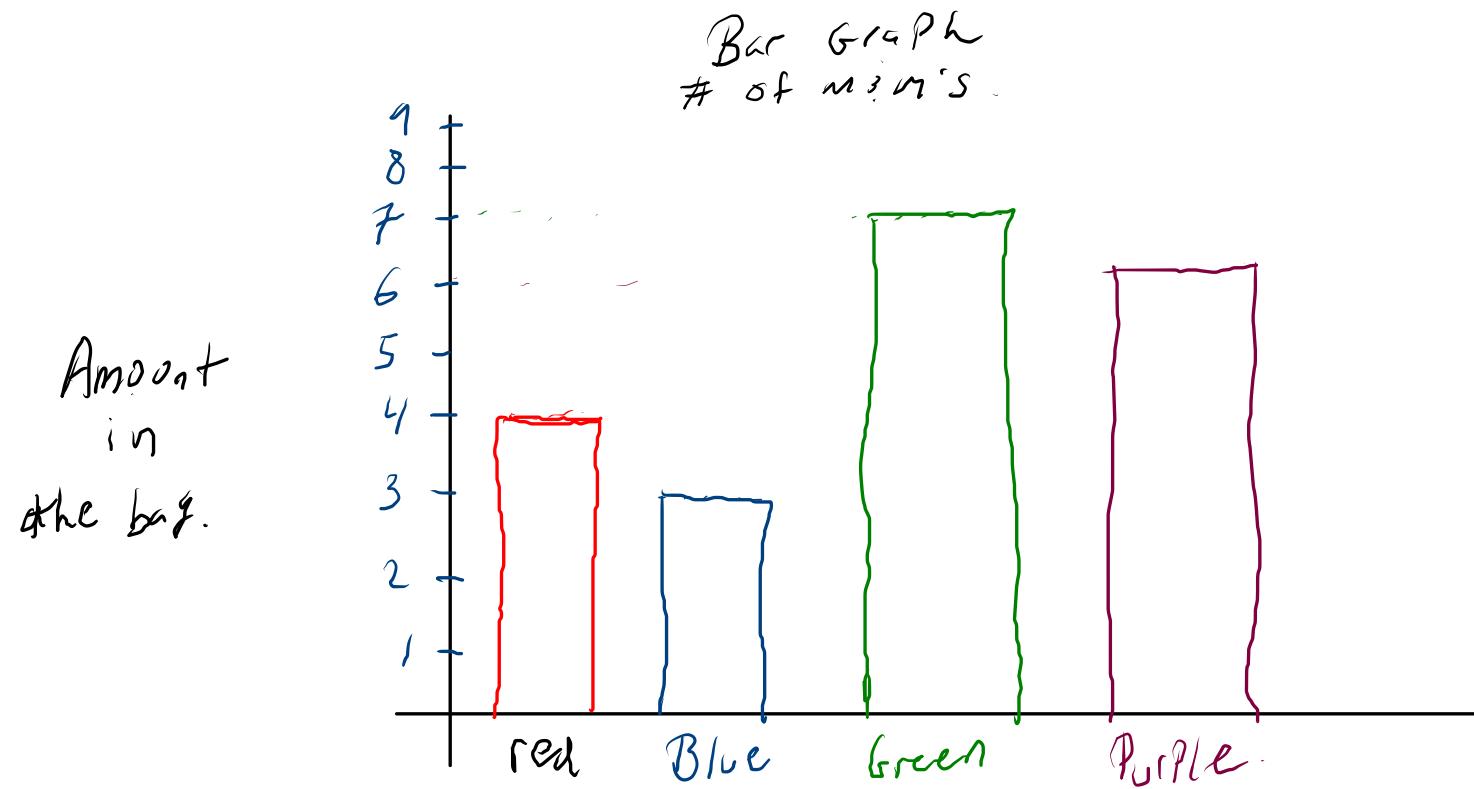
Real Graph is an image of actual objects in a graph form.



A Pictograph is the same as a real graph but you use icons to display.



A Bar graph is a fused version of Picto or real graphs.



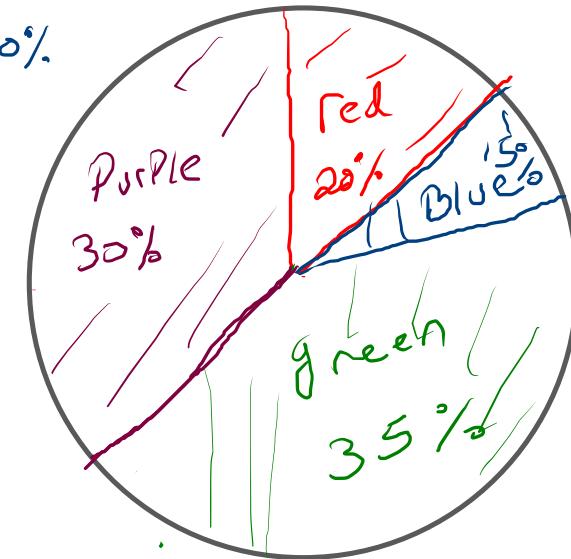
Color of m&m's.

A double bar graph.



Pie Chart.

$$\begin{aligned}4 \text{ red} &\rightarrow \frac{4}{20} = \frac{1}{5} = 20\% \\3 \text{ blue} &\rightarrow \frac{3}{20} = 15\% \\7 \text{ green} &\rightarrow \frac{7}{20} = 35\% \\+ 6 \text{ Purple} &\rightarrow \frac{6}{20} = 30\% \\20 \text{ total} &\qquad\qquad\qquad 100\%\end{aligned}$$

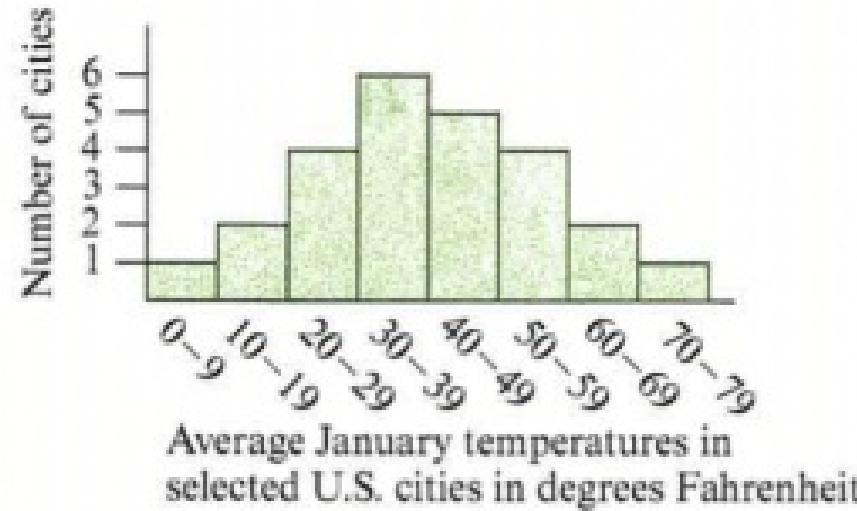


* Pie Charts are best used when the percentages come from the same whole thing.

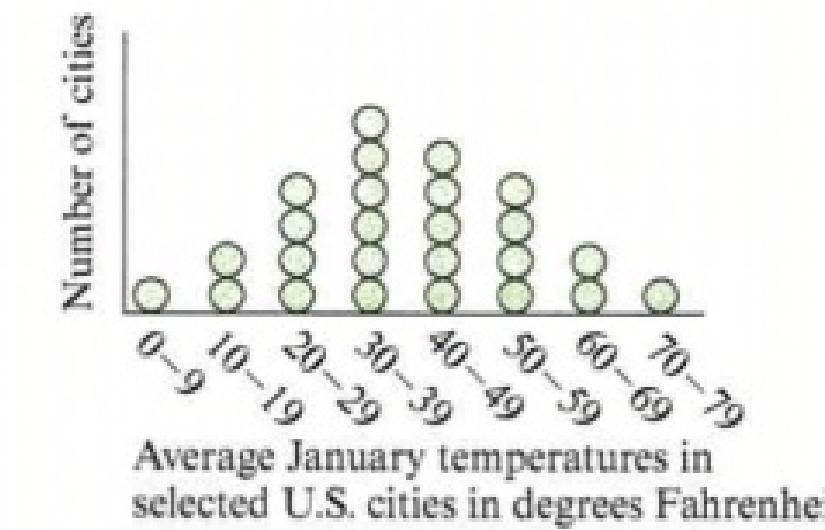
Displaying Numerical Data

① Histograms ≈ Bar graphs.

22, 43, 30, 18, 33, 26, 44, 30, 7, 20, 73, 40, 45,
38, 57, 40, 50, 31, 36, 54, 29, 58, 14, 61, 63



② Dot Plot = Pictograph



Stem and leaf Plots.

TABLE 15.1 Stem-and-leaf plot of average January temperatures in 25 U.S. cities in degrees Fahrenheit

ten's	ones
0	7 ≈ 7
1	84 ≈ 18, 14
2	2609 = 22, 26, 20, 29. Key: 2 2 = 22
3	030816 = 30, 33, 30, 38, 31, 36.
4	34050 ≈ 43, 44, 40, 45, 40
5	7048 ≈ 57, 50, 54, 58.
6	13 = 61, 63
7	3 = 73.
8	
9	

5 4
↓ ↓
tens ones.

Line Graph

Traditional : $y = mx + b \rightarrow$ general Example

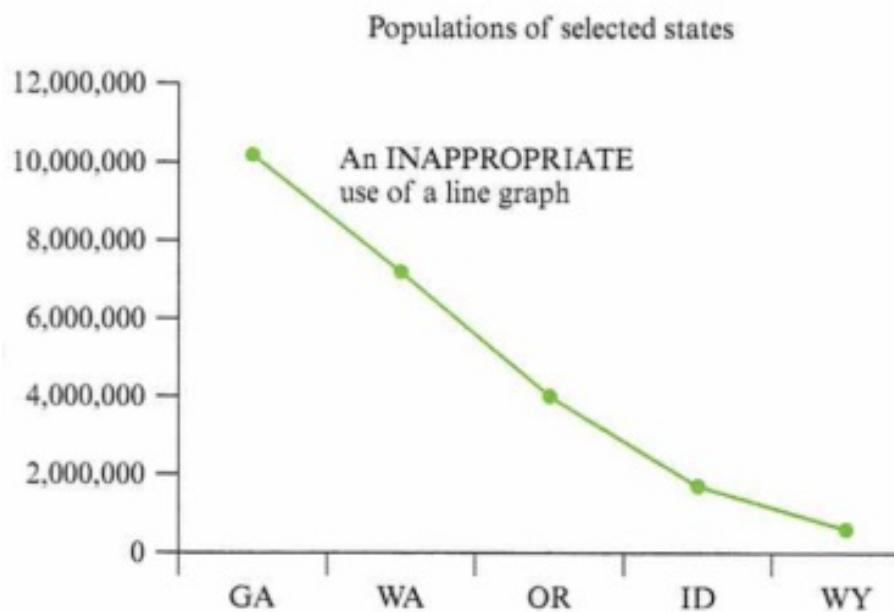
\downarrow \rightarrow

Slope Y-int.

*m: move.
b: begin.*

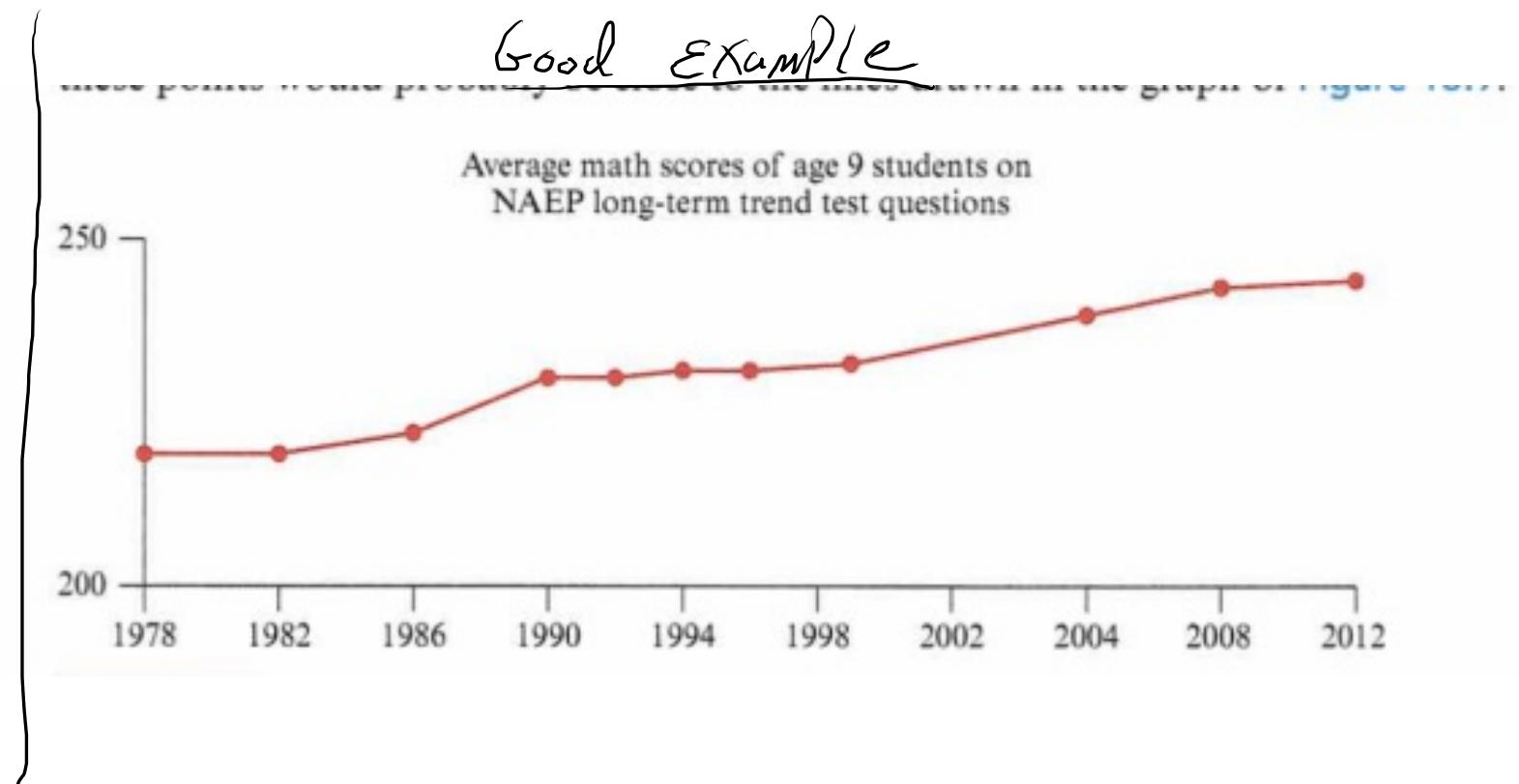
Want to represent growth or decay in some sort.

Not a good example of line.



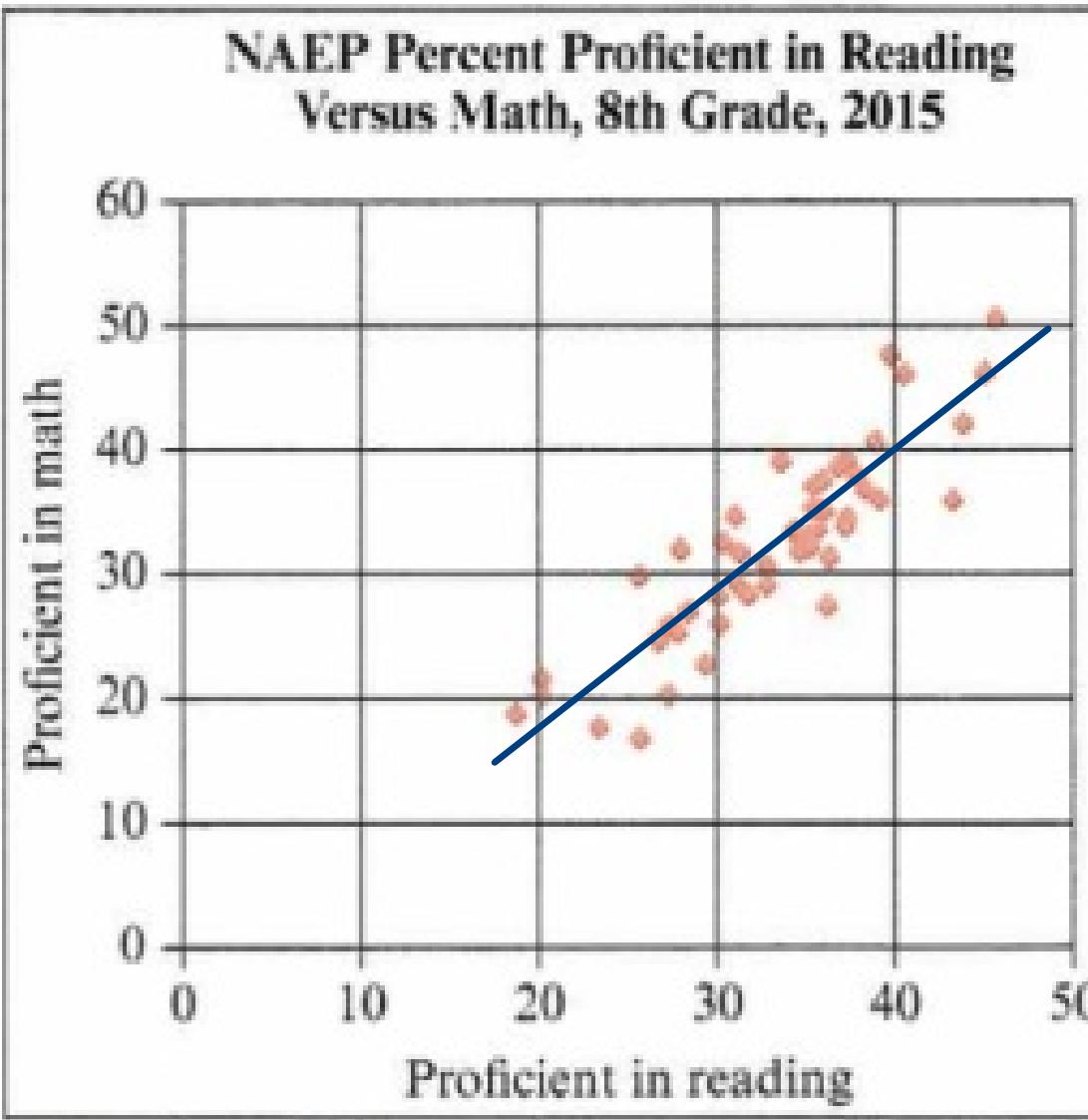
An INAPPROPRIATE
use of a line graph

Good Example

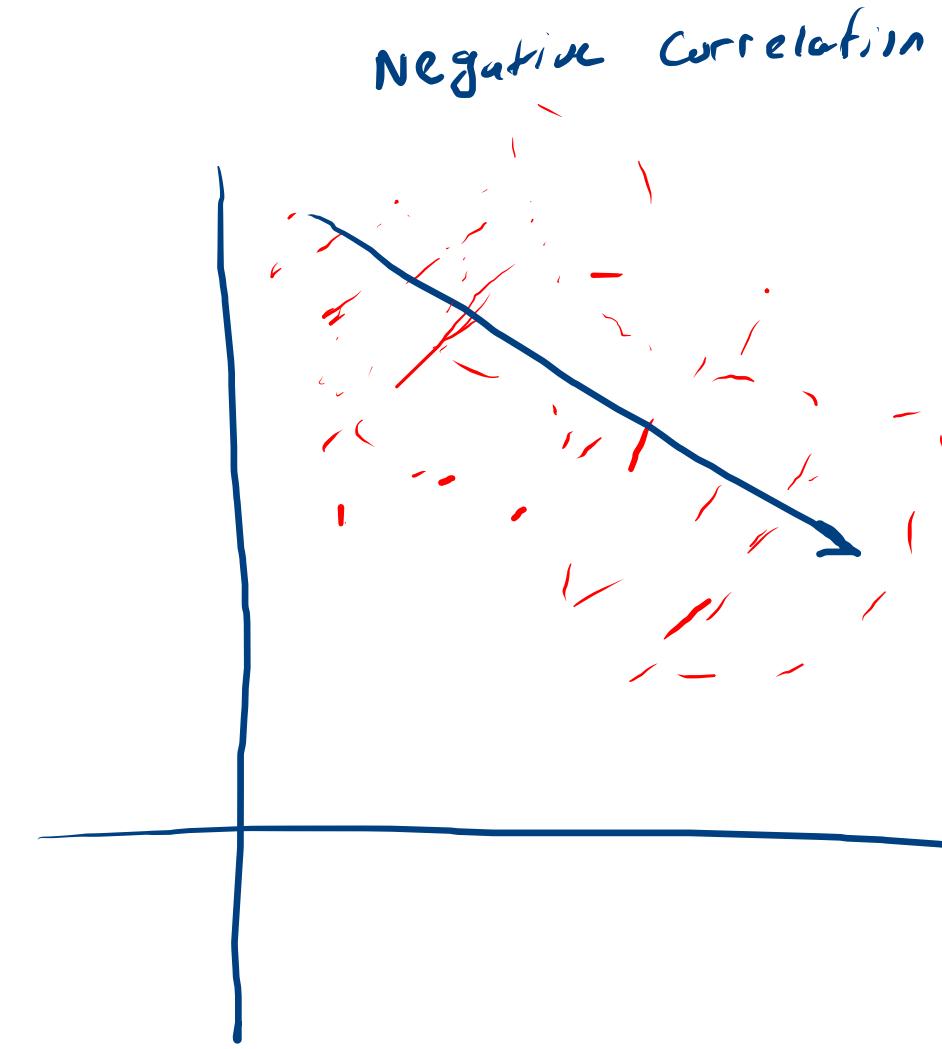


Scatter Plot

Points scattered across a grid.



Positive Correlation



§ 15.3 Center of Data: Mean, Median, Mode

Will generalize the data set given.

The Center of Data

① Mean: The average of data. $\frac{\text{Add up all data values}}{\text{total # of data values}}$

② Median: The middle #

③ Mode: most frequent #.

Mean

Ex] $\{4, 3, 6, 5, 2\}$

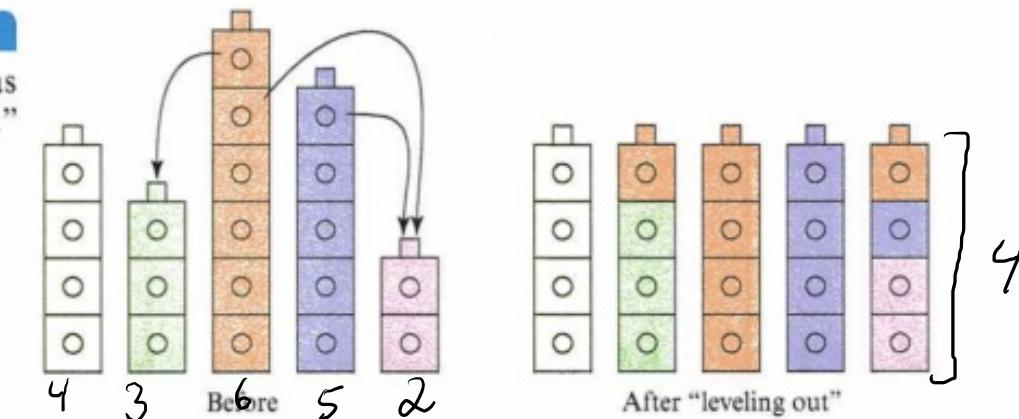
$$\frac{4+3+6+5+2}{5} = \frac{20}{5} = 4$$

Avg
mean

PJ 694 figure 15.15.

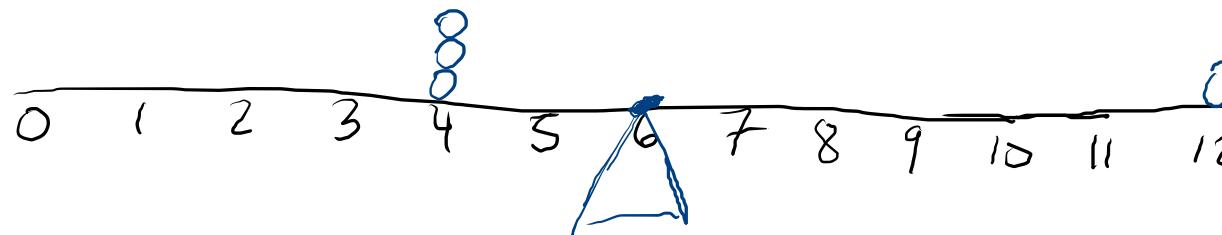
Figure 15.15

The mean as
“leveling out.”



Mean as a Balance Point

$$\{4, 4, 4, 12\} = \frac{4+4+4+12}{4} = \frac{24}{4} = 6 \text{ mean}$$



Median.

* * Must Arrange the data set from least to greatest.

Heads up.

- ① If there is an Even amt of data values, median is avg of the two data value in the middle
- ② If there is an odd amt of data values, median is just the middle.

Ex) ① $\{7, 10, 11, 8, 10\}$

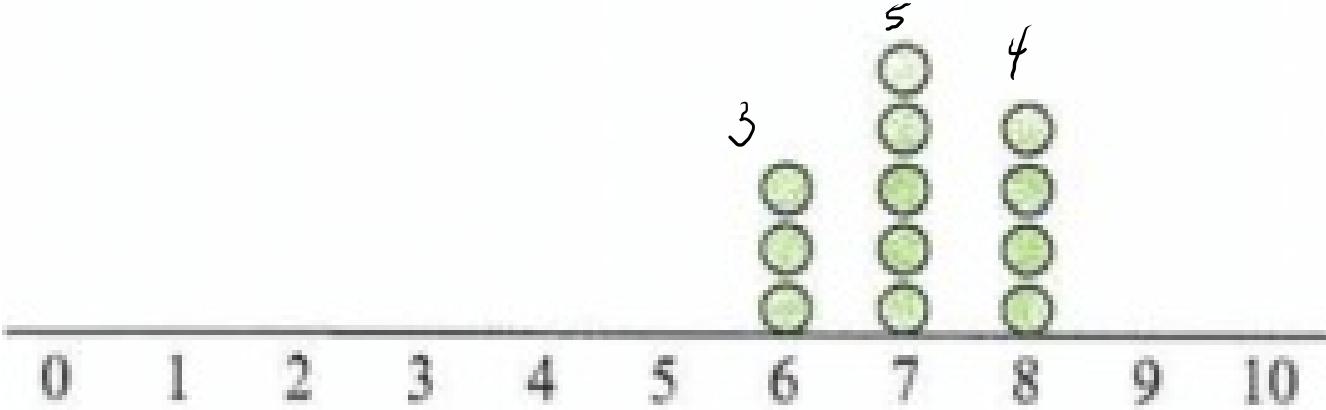
~~7, 8, 10, 10, 11~~

Median = 10.

② $\{3, 4, 6, 3, 5, 5\}$

~~3, 3, 4, 5, 5, 6~~
STAKE Avg.

$$\frac{4+5}{2} = \frac{9}{2} = 4.5$$



Mean: $\frac{3+5+4}{3} = \text{True or } \text{FALSE}$?

$$\frac{6+6+6+7+7+7+7+7+7+8+8+8+8}{12} = 7.083.$$

Mode: 7

Median: 7

Pg 698 #4

4. Juanita read an average of 3 books a day for 4 days. How many books will Juanita need to read on the fifth day so that she will have read an average of 5 books a day over 5 days? Solve this problem in several ways, and explain your solutions.

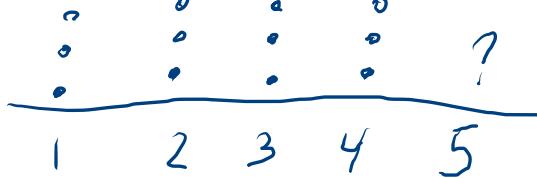
1 way



Books she need
to read.

On the fifth day she needs to read 13 book.

2nd way.



$$\frac{3+3+3+3+x}{5} = 5$$

$$\frac{12+x}{5} \cancel{\times} 5$$

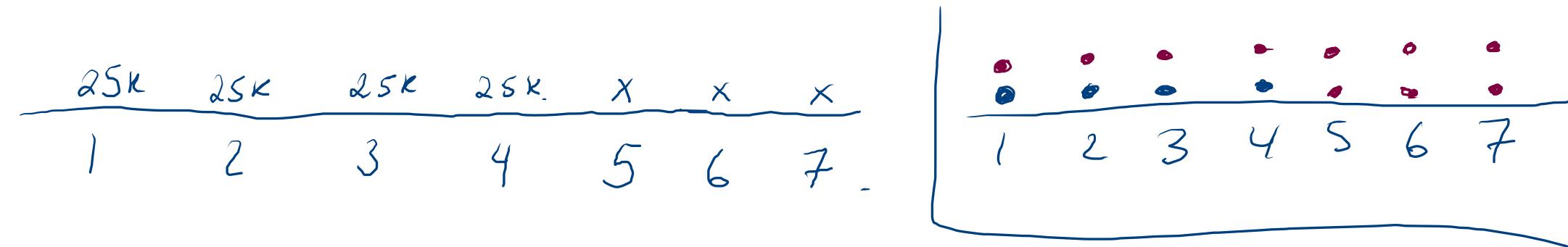
$$\begin{array}{r} 12+x=25 \\ -12 \end{array}$$

$$x=13$$

Pg 700 #5.

5. John's average annual income over a 4-year period was \$25,000. What would John's average annual income have to be for the next 3 years so that his average annual income over the 7-year period would be \$50,000? Solve this problem in two different ways, and explain your solutions.

$$\bullet \rightarrow \$25k$$



$$\frac{4(25000) + 3x}{7} = 50000$$

$$\begin{array}{r} 100,000 + 3x = 350,000 \\ -100,000 \\ \hline 3x = 250,000 \end{array}$$

$$\frac{3x}{3} = \frac{250,000}{3}$$

$$\frac{100,000 + 3x}{7} = 50,000$$

$$X = \$83,333$$