February 28, 2025

STATISTICS – the science of collecting, analyzing, & reporting information about a set of data

Heights of U.S. Mountains

15,105	17,440	15,015
15,320	16,277	16,286
16,390	20,320	16,550
18,008	15,658	

Steam-and-Leaf Plot

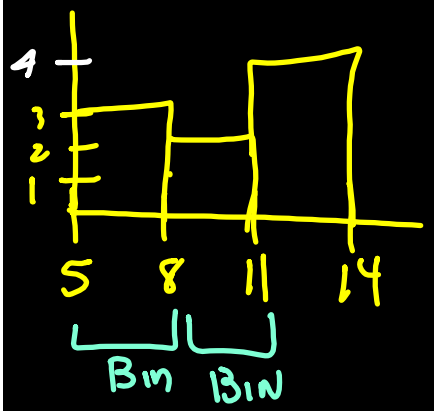
Truncated		Rounded
7 6 3 0	15	0 3 7 7
5 3 2 2	16	3 3 4 6
4	17	4
0	18	0
	19	
3	20	3

$\frac{11}{2} = 5.5 = 6^{th}$

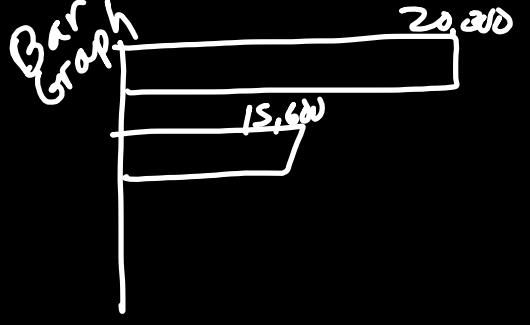
3|20 = 20,300 – 20,399

20|3 = 20250 – 20349

HISTOGRAM – displays how many pieces of data fall in each range.



Bin Settings



MEASURES OF CENTRAL TENDENCY

– describe the "center" of the data

$$\text{Mean} = \text{"average"} = \frac{\text{Sum of data}}{\text{\# of items}} = \frac{\sum x}{n}$$

($\sum$: sum; x: data; n: # of items)

population	sample
μ	$\bar{x}$

$$\bar{x} = \frac{147}{7} = 21$$

Median = the "middle" value = Data must be in order!

2 5 8 17 29 30 56

17 is 4th

$\frac{7}{2} = 3.5 \rightarrow 4^{th}$

Data set: 200 values $\frac{200}{2} = 100^{th} + 101^{st}$

Data set: 75 values

$\frac{75}{2} = 37.5 \rightarrow 38^{th}$

Mode = the most frequent value

2 partners $100,000
23 earn $12,000
9 earn $25,000
16 earn $18,000

$2 \cdot 100{,}000 = 200{,}000$
$23 \cdot 12{,}000 = 276{,}000$
$9 \cdot 25{,}000 = 225{,}000$
$16 \cdot 18{,}000 = 288{,}000$
50 $\quad 989{,}000$

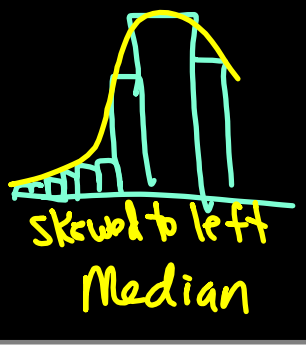
Med $= \frac{50}{2} = 25^{th} + 26^{th}$

2	100,000
9	25,000
16	18,000
23	12,000

Mean $= \frac{989{,}000}{50} = \$19{,}780$

Median $= \$18{,}000$

Mode $= \$12{,}000$



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