

STATISTICS REVIEW

Calculator - Find mean, median, mode, range, IQR, st dev. (σ)
 - Histogram - Bin Settings
 - Box Plot - Width & Alignment

Sort data
 Max - Min
 $Q_3 - Q_1$
 1-Variable Stats

a) Stem-Leaf

	<u>Truncated</u>	<u>Rounded</u>
Truncate		
<u>Write Key</u>		
# in 1000's	12,300	

Rounded 12|3 = 12,250 - 12,349

Truncated 12|3 = 12,300 - 12,399

Meas. of Central Tend./Var.

3) Median - Data in order

250 pieces of data $\frac{250}{2} = 125^{th} + 126^{th}$ ^{even}

271 pieces of data $\frac{271}{2} = 135.5 = \boxed{136^{th}}$

4)

# of \$5 coins	Coins
10	10,000
8	15,000
22	5,000

Mean

$10 \cdot 10,000 = 100,000$

$8 \cdot 15,000 = 90,000$

$22 \cdot 5,000 = 110,000$

$\frac{300,000}{40}$

$\bar{x} = \frac{300,000}{40} = 7500$

Median = $\frac{40}{2} = 20^{th} + 21^{st}$

= $\boxed{5000}$

Mode = $\boxed{5000}$

Data in order:

→

22	5000
10	10,000
8	15,000

5) Box-and-Whisker Plot

$$\text{Median} = \frac{22}{2} = \frac{11^{\text{th}} + 12^{\text{th}}}{2}$$

$$\frac{79 + 83}{2} = \boxed{81}$$

$$\text{Quartiles: } \frac{11}{2} = 5.5 \approx 6^{\text{th}}$$

$$Q_1 = 68 \quad Q_3 = 89$$

3	7
4	8
5	9
6	2 8 8
7	1 5 8 8 9
8	3 6 6 8 8 9
9	0 2 5 8
10	1

22 scores

$$10 | 1 = 101$$

5) Box-and-Whisker Plot

$$\text{Median} = \frac{22}{2} = \frac{11^{\text{th}} + 12^{\text{th}}}{2}$$

$$\frac{79 + 83}{2} = \boxed{81}$$

$$\text{Quartiles: } \frac{11}{2} = 5.5 \approx 6^{\text{th}}$$

$$Q_1 = 68 \quad Q_3 = 89$$

$$\text{IQR} = 89 - 68 = 21$$

$$\text{Outliers} = \boxed{35}$$

$$21 * 1.5 = 31.5$$

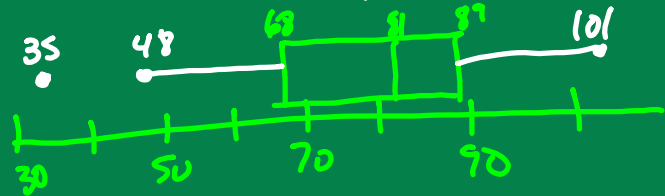
$$\text{Lower: } 68 - 31.5 = 36.5$$

$$\text{Upper: } 89 + 31.5 = 120.5$$

3	5
4	8
5	9
6	2 8 8
7	1 5 8 8 9
8	3 6 6 8 8 9
9	0 2 5 8
10	1

22 scores

$$10 | 1 = 101$$



Study journal!

List: 3 meas. of central tend.

most affected Mean, Median, Mode

3 meas. of variation

Range, IQR, st. dev.

most affected

↑ statisticians prefer



Med./IQR

↑ skewed



Mean/St. Dev.

NORMAL DISTRIBUTION

Know $Z = \frac{X - \mu}{\sigma} = \frac{\text{Raw Score} - \text{Mean}}{\text{St. Dev.}}$

of calories in school lunch
 Mean = 200 calories St. Dev. = 50

In one month (20 lunches), how many fall
 280 + 320?

$$Z = \frac{280 - 200}{50} = 1.6$$

$$Z = \frac{320 - 200}{50} = 2.4$$



→ 0.4918

→ 0.3554

0.1364

$$20 * 0.1364 = 2.728$$

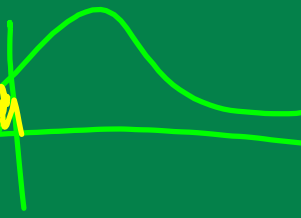
How many calories in
 lowest 20% of lunches?

*
 50

$$0.84 = \frac{X - 200}{50}$$

0.2000

col. C



$$-92 = X - 200$$

+200

$$108 = X$$