

## STAT REVIEW

$$Z = \frac{x - \mu}{\sigma}$$

- \* List 3 meas. of central tend.
- List 3 " of variation
- Range, IQR, Stand. dev.

## Calculator Problem

- \* Find stats
- \* Make histogram/box plot

## Matching/Mult. Choice

Types of Error

Types of Study

Descrip vs inferential

↑ use samples

Sampling Methods

## Abuses of Statistics

Given a situation, describe what is wrong.



Median/IQR

Stand. Dev.

$\{27, 31, 46, 64\}$

Find st. dev.

$$\mu = \frac{168}{4} = 42$$

$$27-42 \quad 31-42 \quad 46-42 \quad 64-42$$

$$-15^2 + -11^2 + 4^2 + 22^2$$

$$225 + 121 + 16 + 484 = \frac{846}{4}$$

$$= \sqrt{211.5}$$

$$= 14.54$$

## Given Stem & Leaf

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

18 Scores

$$\frac{18}{2} = 9^{\text{th}} + 10^{\text{th}}$$

$$\frac{9}{2} = 4.5 \approx 5^{\text{th}}$$

$$\text{Median} = 79$$

$$Q_3 = 92$$

$$Q_1 = 72$$

### Outliers

$$\text{IQR} = 92 - 72 = 20$$

$$1) \text{IQR} \times 1.5 = \#$$

$$20 \times 1.5 = 30$$

2) Lower boundary

$$Q - \# = 72 - 30 = 42$$

$$3) \text{Upper boundary} = 92 + 30 = 122$$

$$\text{Outliers} = 37$$

## Normal Distrib.

#3 Normal Cdf = Need %  
Inv Norm = Need raw score

Menu - Stats - Distributions

H continued. % confident  
What is probability  
that the mean TV time  
was between 19<sup>hrs</sup> + 21.5  
hrs



$$E = Z \cdot \sigma_{\bar{x}}$$

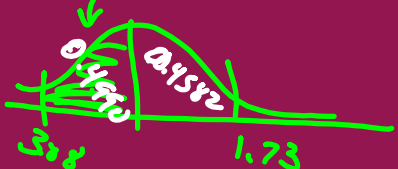
$$1.6 = Z \cdot 0.52$$

$$0.9 = Z \cdot 0.52$$

$$\frac{1.6}{0.52} = Z$$

$$1.73 = Z$$

$$3.08 = Z$$



0.4990  
0.4582  
0.9572

## Confidence Intervals

14 100 Sophomores  
 $\bar{y} = 20.6$  hrs  
 $S = 5.2$  hrs

95%  
Confident

$$1) \sigma_{\bar{x}} = \frac{S}{\sqrt{n}} = \frac{5.2}{\sqrt{100}} = 0.52$$

$$2) E = Z \cdot \sigma_{\bar{x}}$$

$$E = (1.95)(0.52)$$

$$= 1.02$$



$$\bar{x} \pm E = 20.6 \pm 1.02$$

$$19.58^{\text{hr}} \quad 21.62^{\text{hr}}$$

$$21.62 - 19.58$$