# STATISTICS

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

### Heights of U.S. Mountains

| | | |
|---|---|---|
| 15,705 | 17,440 | 15,015 |
| 15,320 | 16,277 | 16,286 |
| 16,390 | 20,320 | 16,550 |
| 18,008 | 15,658 | |

### Stem-and-Leaf Plot

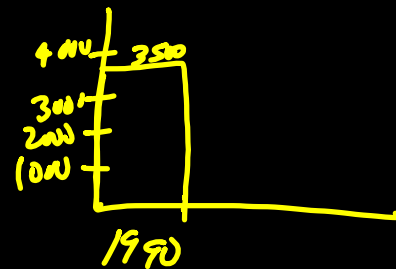| Truncated | | Rounded |
|---|---|---|
| 7 6 3 0 | 15 | 0 3 7 7 |
| 5 3 2 2 | 16 | 3 3 4 6 |
| 4 | 17 | 4 |
| 0 | 18 | 0 |
| | 19 | |
| 3 | 20 | 3 |

$3|20 = $
20300—20399

$20|3 = 20,250 - $
20,349

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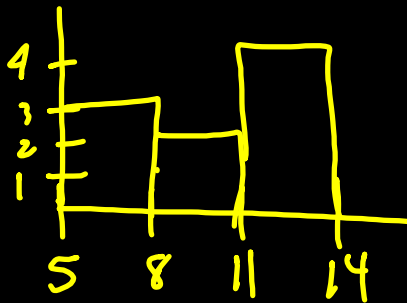


Bin  Bin

Bin Settings

To create a Histogram:

1) Type data in a spreadsheet

2) Add a Data & Statistics page.

3) Select the data to be graphed on the x-axis.

4) Select Menu--Plot Type--Histogram

5) Select Menu--Plot Properties--Histogram Properties--Bin Settings. Set the Bin Width AND the alignment.

6) Scale the x- and y-axis using Window Settings.

# MEASURES OF CENTRAL TENDENCY

– describe the "center" of the data

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

(sum, data)

$\underline{\text{population}}$     $\underline{\text{sample}}$
$\mu$           $\bar{x}$

Median – the middle value – Data must be in order!

$2 \quad 5 \quad 8 \quad \boxed{17} \quad 29 \quad 30 \quad 56$

odd $\rightarrow \dfrac{7}{2} = 3.5 \approx 4^{th}$

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

Data set : 75 values    $\dfrac{75}{2} = 37.5 \approx 38^{th}$

Mode – the most frequent value

2 partners  $100,000  = 2 · 100,000 = 200,000

23 earn  $12,000         23 · 12,000 = 276,000

9 earn  $25,000                    = 225,000

16 earn  $18,000                   = 288,000
―――                               ―――――――
50                                  $989,000

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

Median  2   100,000
         9   25,000
→₂₇ 16   18,000
        23   12,000
        ――
        50

Median = $18,000

$\dfrac{50}{2}$ = 25th & 26th   ( $18,000 )

Mode = $12,000

Calculating Statistics on the TI-Nspire

1) Enter data in a spreadsheet. Be sure to name the column.

2) Add a Data & Statistics page. Label the x-axis with the data to be graphed.

3) Select Menu--Statistics--Stat Calculations--1-Variable Stats

    Scroll down the list of stats to find the ones you need.

To find Mode:

1) On the spreadsheet page, click on the column you want to sort in order.

2) Arrow upward until the entire columns turns blue.

3) Select Menu--Actions--Sort

4) The data will be in numerical order. Search through the data to find the mode.