

## CHAPTER 20 - THE MEAN AND MEDIAN

### TI-84 Plus

Enter the data values into **List 1**.

L1	L2	L3	1
244.6			
245.1			
248			
248.8			
250			
251.1			
251.2			
L10=244.6			

Press **2nd** **Y=** (STAT PLOT) 1, and set up **Plot1** as shown.

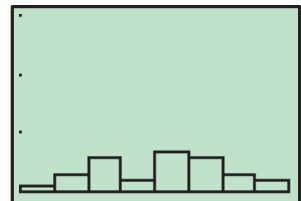
```
Plot1 Plot2 Plot3
On Off
Type: L1
Xlist: L1
Freq: 1
```

Press **WINDOW**, and change the window settings as shown.

```
WINDOW
Xmin=240
Xmax=280
Xscl=5
Ymin=0
Ymax=30
Yscl=10
Xres=1
```

Press **GRAPH** to draw the histogram.

The distribution appears to be approximately symmetrical.



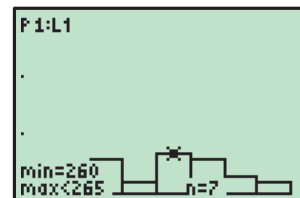
Press **STAT** **►** 1:1-Var Stats **2nd** 1 (L1) **ENTER**.

The mean of the data is  $\approx 260.8$ , and the median is 263.

```
1-Var Stats
x̄=260.7633333
Σx=7822.9
Σx²=2042308.47
Sx=9.064880444
σx=8.912518661
n=30
```

```
1-Var Stats
n=30
minX=244.6
Q1=253.9
Med=263
Q3=266.5
maxX=277.5
```

Press **GRAPH** to return to the histogram, then press **TRACE**. Scrolling across the columns, we find that the modal class is  $260 \leq d < 265$  m.



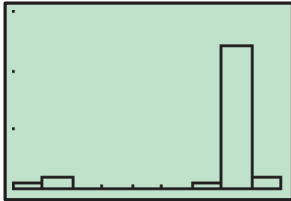
Press **WINDOW**, and change Xscl to 2. Press **GRAPH** to draw the histogram again. The modal class in this case is  $264 \leq d < 266$  m.



Return to the list data, and change the three shortest drives to 82.1 m, 103.2 m, and 111.1 m. Press **WINDOW**, and set up the screen as shown.

```
WINDOW
Xmin=75
Xmax=300
Xscl=25
Ymin=0
Ymax=30
Yscl=10
Xres=1
```

Press **GRAPH** to draw the histogram.



```
1-Var Stats
x̄=246.8533333
Σx=7381.6
Σx²=1890635.16
Sx=50.63999873
σx=49.78884569
↓n=30
```

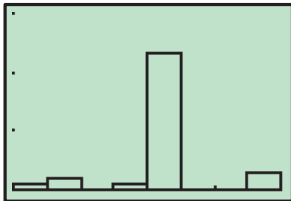
```
1-Var Stats
↑n=30
minX=82.1
Q1=253.9
Med=263
Q3=266.5
maxX=277.5
```

The mean has decreased to  $\approx 246.1$ , but the median is still 263.

Return to the list data, and change the three longest drives to 403.9 m, 415.5 m, and 420.0 m. Press **WINDOW** , and set up the screen as shown.

Press **GRAPH** to draw the histogram.

```
WINDOW
Xmin=50
Xmax=450
Xscl=50
Ymin=0
Ymax=30
Yscl=10
Xres=1
```



```
1-Var Stats
x̄=259.8333333
Σx=7795
Σx²=2175374.6
Sx=71.91320599
σx=70.70449459
↓n=30
```

```
1-Var Stats
↑n=30
minX=82.1
Q1=253.9
Med=263
Q3=266.5
maxX=420
```

The mean has increased to  $\approx 259.8$ , but the median is still 263.