

Example of a Frequency Distribution Table

Test Scores: 62, 68, 68, 70, 77, 78, 78, 78, 80, 80,
81, 82, 82, 82, 84, 84, 84, 84, 84, 88,
89, 89, 90, 90, 90, 93, 93, 93, 99, 99

Fill in the following table:

Data (D)	Tally	Frequency (f)	Product (Df)
62			
68			
70			
77			
78			
80			
81			
82			
84			
88			
89			
90			
93			
99			

The final table should look like this:

Data (D)	Tally	Frequency (f)	Product (Df)
62	I	1	62
68	II	2	136
70	I	1	70
77	I	1	77
78	III	3	234
80	II	2	160
81	I	1	81
82	III	3	246
84	IIII	5	420
88	I	1	88
89	II	2	178
90	III	3	270
93	III	3	279
99	II	2	198
Totals:		30	2499

Using the table, calculate the Range, Mean, Median, and Mode.

Range: $99 - 62 = 37$

Mean: $\frac{2499}{30} = 83.3$

Median: Since there are 30 scores we need to average the 15th and 16th scores.

$$\frac{84 + 84}{2} = 84$$

Mode: 84

Interval Frequency Table

An interval frequency table is not as precise, but valuable when the amount of data is large.

Let's make an interval frequency table for our previous example.

Fill in just the first 2 columns first.

Score Intervals	Frequency (f)	Midpoint (m)	Product (mf)
60-69			
70-79			
80-89			
90-100			
Total:			

Using the table, calculate the Range, Mean, Median, and Mode.

Range: (You can't find the exact range from the table, so subtract the highest – lowest.)

$$\text{Range: } 100 - 60 = 40$$

Mean: (In order to find the mean, we will have to fill in the other columns. Calculate the midpoint of each interval by taking the difference of the interval endpoints and dividing by 2. Then multiply the frequency (f) times the midpoint (m) for the product column. Add all of the products and divide by the total number of data.)

Score Intervals	Frequency (f)	Midpoint (m)	Product (mf)
60-69	3	64.5	193.5
70-79	5	74.5	372.5
80-89	14	84.5	1183
90-100	8	95	760
Total:	30		2509

Mean:

$$\text{Mean: } \frac{2509}{30} = 83.6$$

Notice how close this is to the actual mean.

Median: (The interval that contains the middle score or scores)

Median: 80-89

Mode: (The interval with the highest frequency)

Mode: 80-89

We can visually see the data if we make a histogram. Here's what it looks like for our data:



Some things to notice:

- There are no gaps between the bars because there is continuous data.
- Both the axes should be labeled.
- The graph should have a title.
- The limitation of a histogram is that you cannot tell exact values.