

5.3 - Graphs, Tables, Charts

Frequency Distribution (Ex 1).

- ① 1st column is the data in ascending order. The 2nd column shows the # of times the data appeared. (the frequency)
- ② Total both columns.
* Check that the total of the frequency column equals the # of data items. Otherwise, you made an error.

③ Multiply column 1 X column 2
This is column 3, The Total.

Add it up

*Look at Example 1 and 2 on
p 232

Stem and leaf plot (ex 2)

Stem	Leaf
0	4 8 9
1	2
2	7 8 9/9
3	
4	0 0 0 2 4 4

$$\text{mean} = \frac{396}{14} = 28$$

$$\text{mode} = 40$$

$$\text{median} = 29$$

$$\text{Range} =$$

$$44 - 4 = 40$$

$$4/2 = 42$$

① How many data items were used?

14

② Find the range, mean, median and mode.

③ Find the IQR

$$Q_1 = 12 \quad Q_2 = 29 \quad Q_3 = 40 \quad Q_4 = 44$$

$$IQR = Q_3 - Q_1 = 40 - 12 = 28$$

④ What are the outliers?

Lower: $Q_1 - 1.5(IQR)$

$$12 - 1.5(28) = 12 - 42 = -30$$

Upper: $Q_3 + 1.5(IQR)$

$$40 + 1.5(28) = 82$$

$$Q_1 = 4, 8, 9, 12, 27, 28, 29 = \textcircled{12}$$

$$Q_2 = 29$$

$$Q_3 = 29, 40, 40, 40, 42, 44, 44 = \textcircled{40}$$

$$Q_4 = 44$$

$$IQR = 40 - 12 = 28$$

$$\text{Lower} \quad 12 - 1.5(28) = -30$$

$$\text{Upper} \quad 40 + 1.5(28) = 82$$

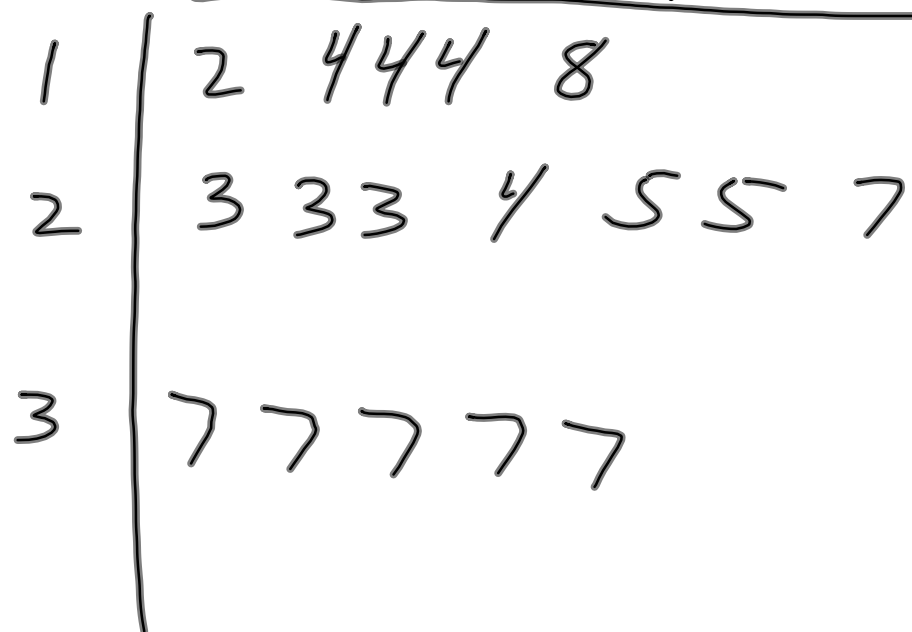
Make a frequency chart and then a stem and leaf plot from the following data:

23, 37, 12, 14, 37, 25, 27, 37, 14, 14, 18, 25, 23, 37, 24, 23, 37

Find the mean, median, mode, and range.

Find the IQR and outliers

<u>amount</u>	<u>Frequency</u>	<u>Total</u>
12	1	12
14	3	42
18	1	18
23	3	69
24	1	24
25	2	50
27	1	27
37	5	185
	<u>17</u>	<u>427</u>

Stem and Leaf Plot

$$2/3 = 23$$

$$\text{mean} = \frac{427}{17} = 25$$

$$\text{median} = 24$$

$$\text{mode} = 37$$

$$\text{range} = 25$$

$$Q_2 = 24$$

$$Q_3 = 37$$

$$\text{IQR} = 37 - 16$$

$$Q_1 = \frac{14 + 18}{2} = 16$$

$$Q_4 = 37$$

$$= 21$$

Outliers:

$$\text{Lower: } 16 - 1.5(21) = -15.5$$

$$\text{Upper: } 37 + 1.5(21) = 68.5$$

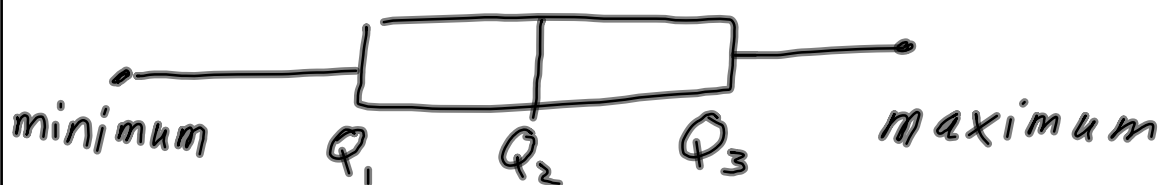
$$IQR = 37 - 16 = 21$$

Outliers:

$$\text{lower: } 16 - 1.5(21) = -15.5$$

$$\text{upper: } 37 + 1.5(21) = 68.5$$

Box and Whisker Plot - Ex 4



Similar to the quartiles we did.

Q_1 Q_2 Q_3 are the same as quartiles. The maximum = Q_4 in quartiles. The minimum is the only extra item. $IQR = Q_3 - Q_1$. It's the same.

