

6.1 Representations of Data

Standard:

S.ID.1



Old Mean, Median, Mode

Find Mean, Median & Mode of the data set: $\{3, 1, 1, 8, 2, 1, 3, 5, 3\}$

$$\text{Mean} = \frac{\text{sum of data}}{\text{number of data entries}} = \frac{27}{9} = 3$$

Median = "the middle number"
when the data is in ranking order

1, 1, 1, 2, 3, 3, 3, 5, 8

Mode = the number(s) that occurs the most 1, 3

New Representations of Data

What is data?

- Data is a collection of facts, such as measurements or values for use of forming conclusions
- There are 4 types of Representations of Data which are dot plots, histograms, box & whiskers plots and stem-and-leaf plots.

[1] Dot Plots - is a set of data that is represented by using dots over a number line.

[Example] Create a dot plot for 3, 1, 1, 8, 2, 1, 3, 5, 3.

1, 1, 1, 2, 3, 3, 3, 5, 8

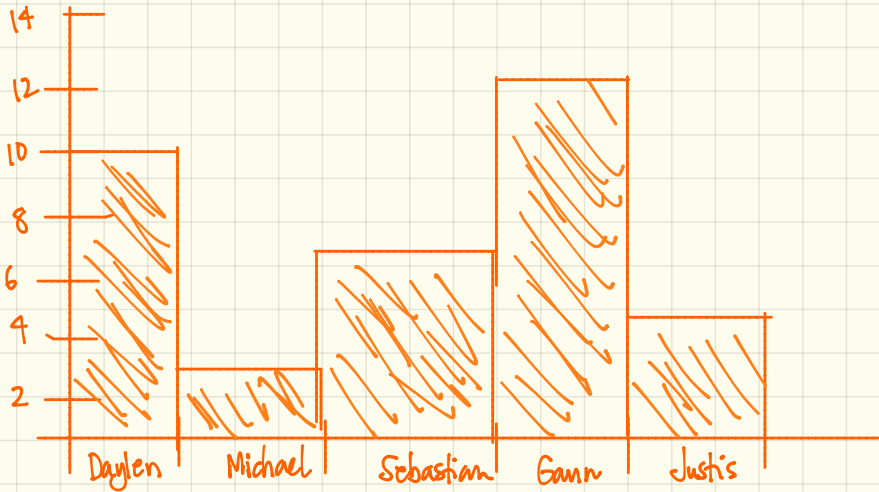


2 Histogram - is a graphical representation consisting of rectangles where the heights (or frequencies) denote the number of occurrences.

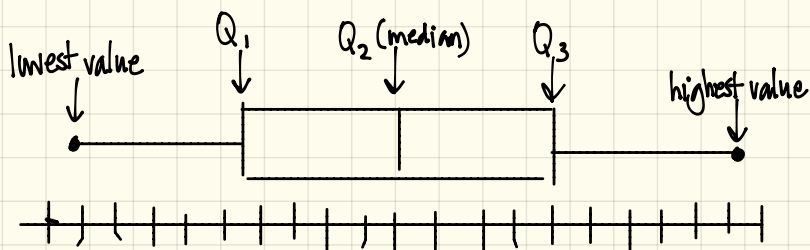
[Example] Create a histogram using the information.

Let's say that the 9th grade boys are playing in a basketball game. The following table shows the amount of points certain players made.

Player	Points
Dawlen	10 points
Michael	3 points
Sebastian	7 points
Gavin	12 points
Justis	4 points



[3] Box & Whiskers Plots - is a graphical representation where the box represents the characteristics of Q_1 , Q_2 (median), Q_3 and the whiskers represents the lowest value and highest value of the data on the number line.



Q_1 → median of the 1st half of data

Q_2 → median of the entire data

Q_3 → median of the 2nd half of data

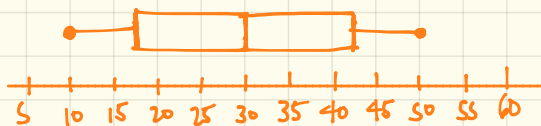
[Example] Create a box & whiskers plot using $\{10, 15, 20, 25, 30, 35, 40, 45, 50\}$

Lowest value 10
Highest Value 50

Q_1 17.5

Q_2 30

Q_3 42.5



4 Stem-and-leaf Plots - is a method for showing the frequency for which certain classes of values occur.

[Example] Suppose the following list: 12, 13, 21, 27, 33, 34, 35, 37, 40, 40, 41.

Stem	Leaf
1	2 3
2	1 7
3	3 4 5 7
4	0 0 1