1.7 Measuring Variability (Part 1)

There are several ways to measure the variability of a distribution. The three most common are the *range*, *interquartile range*, and *standard deviation*.

The simplest measure of variability is the **range**.

The **range** of a distribution is the distance between the minimum value and the maximum value.

*Note that the range of a data set is a single number. In everyday language, people sometimes say things like, "The data values range from 5 to 85." Be sure to use the term *range* correctly, now that you know its statistical definition.*
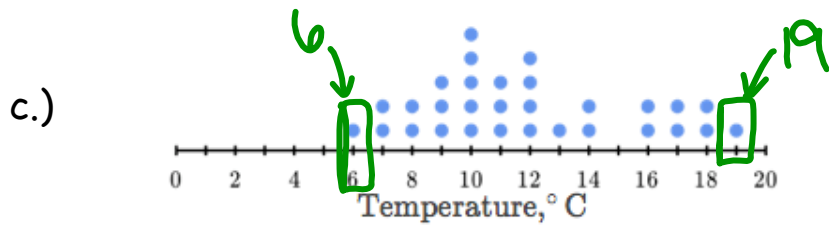
Example: Find the range of the data.

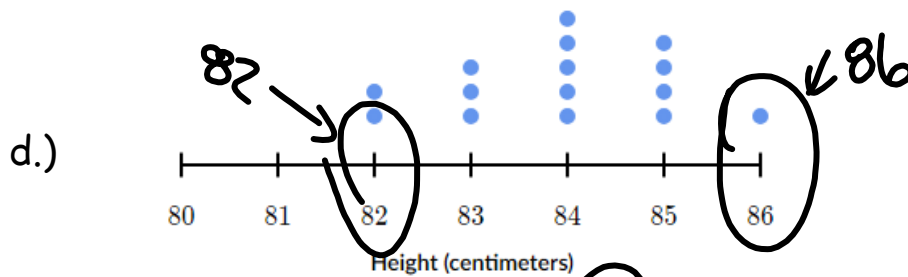a.) {49, 52, 53, 55, 58, 61, 62, 63, 64, 61, 55, 49}

$$64 - 49 = \boxed{15}$$

b.) {250, 275, 325, 300, 200, 225, 175}

$$325 - 175 = \boxed{150}$$

Example: Find the range of the data.

c.)

Temperature, ° C

$$19 - 6 = \boxed{13}$$

d.)

Height (centimeters)

$$86 - 82 = \boxed{4}$$

Example: Find the range of the data.

e.)

stem	leaf
0	1, 1, 2, 2, 3, 4, 4, 4, 4, 5, 8
1	0, 0, 0, 1, 1, 3, 7, 9
2	5, 5, 7, 7, 8, 8, 9, 9
3	0, 1, 1, 1, 2, 2, 2, 4, 5
4	0, 4, 8, 9
5	2, 6, 7, 7, 8
6	3, 6

Key: 6|3 = 63 years old

$$66 - 1 = \boxed{65}$$

f.) **Race Running Times in Seconds**

Stem	Leaves
12	3 6
13	0 2 5
14	1 2 4 6
15	2 3 7 8
16	1 2 4 6 8
17	5 7 8
18	1 3

Key: 14|2 = 14.2 seconds

$$18.3 - 12.2$$
$$\boxed{6.1}$$