$$3, 8, 7, 7, 5$$

Mean

$$\frac{3 + 8 + 7 + 7 + 5}{5} = \frac{30}{5} = 6$$

Add data items and divide by number of items

Median

$$3, 5, \textcircled{7}, 7, 8$$

Write in order and choose middle item

Use $\frac{n+1}{2}$ to identify middle item

If even number of data items, median is halfway between the middle two.

Mode

Mode, if it exists, is data item that occurs most often.

Range

Range is a measure of spread

Range = Highest data item - Lowest

$$= 8 - 3$$

$$= 5$$

It is not wise to average averages!

Calculating the mean

Ex   In a class of 30 there are 20 boys and 10 girls.

In a test the boys' mean is 54 and the girls' mean is 64 what is the mean for the class?

$$\text{Mean for class} = \frac{\text{Total marks for class}}{\text{Total number of students in class}}$$

Boys   total marks $= 54 \times 20 = 1080$
Girls   total marks $= 64 \times 10 = 640$

Class total marks $= \overline{1720}$

$$\text{Class mean} = \frac{1720}{30} = 57.3$$

Ex2   A class has 18 girls and 12 boys

In a test the class mean $= 60$

The boys' mean $= 65$

Find the girls' mean

Need $\dfrac{\text{Total girls' marks}}{\text{Number of girls}}$

Total class marks = 60×30 = 1800

Total boys marks = 12×65 = 780

Total girls marks =   1020

girls mean = $\dfrac{1020}{18}$ = 56.7