

Measure of spread

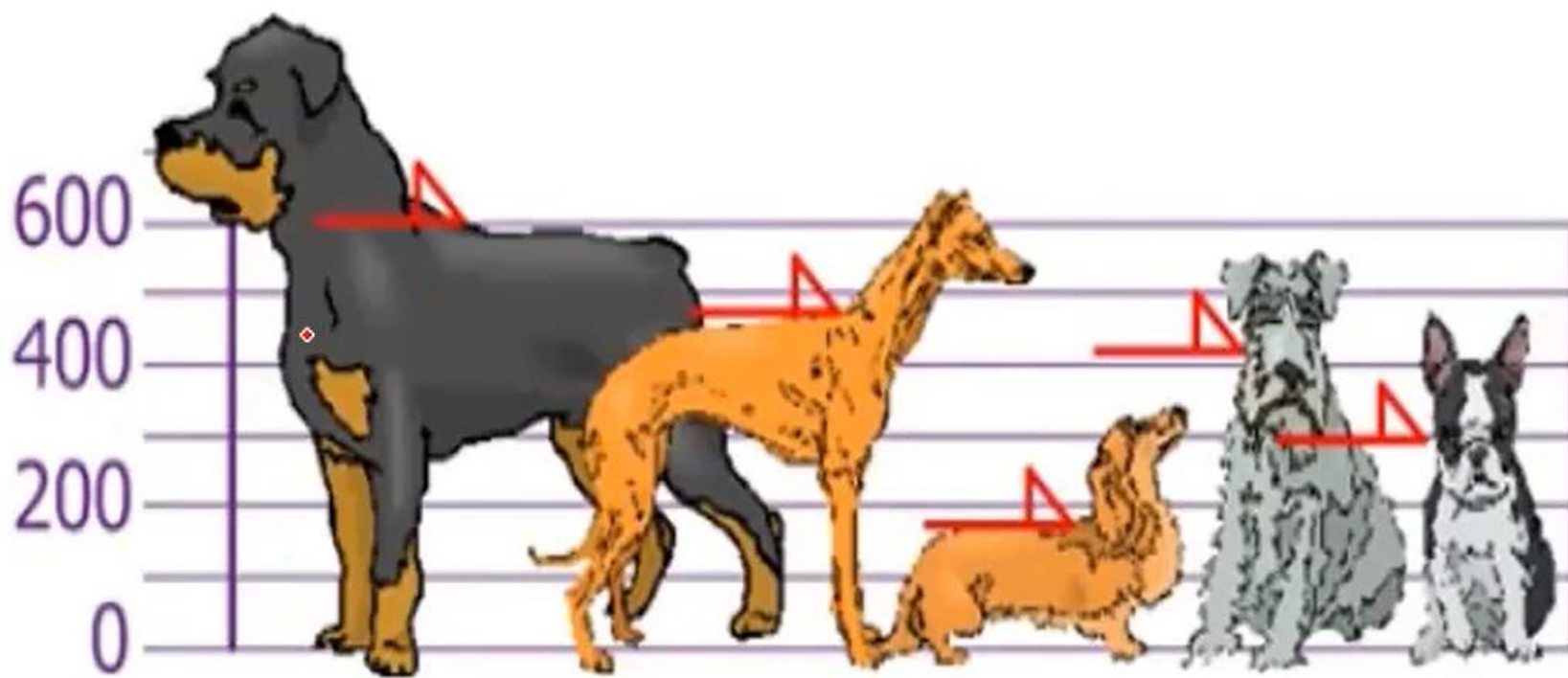
Variance

Standard Deviation

Mean \rightarrow sum
Stand \rightarrow dividing

Measure of spread | Standard Deviation

Find out the Mean, the Variance, and the Standard Deviation



The heights (at the shoulders) are:

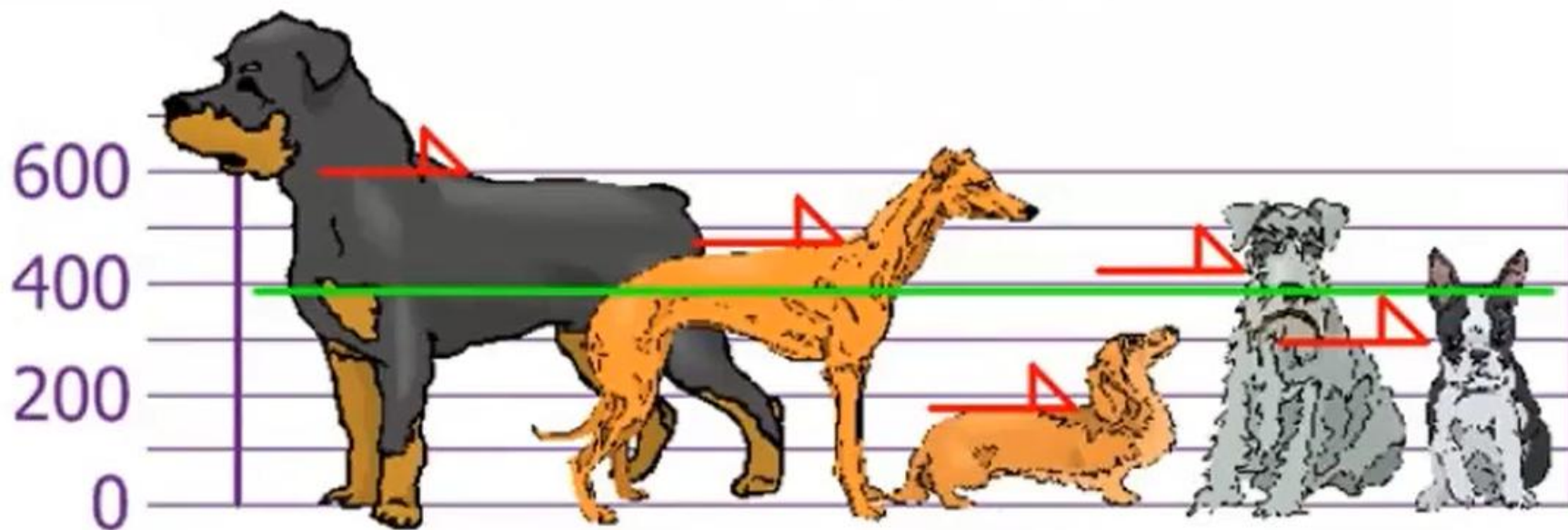
600mm, 470mm, 170mm, 430mm and 300mm

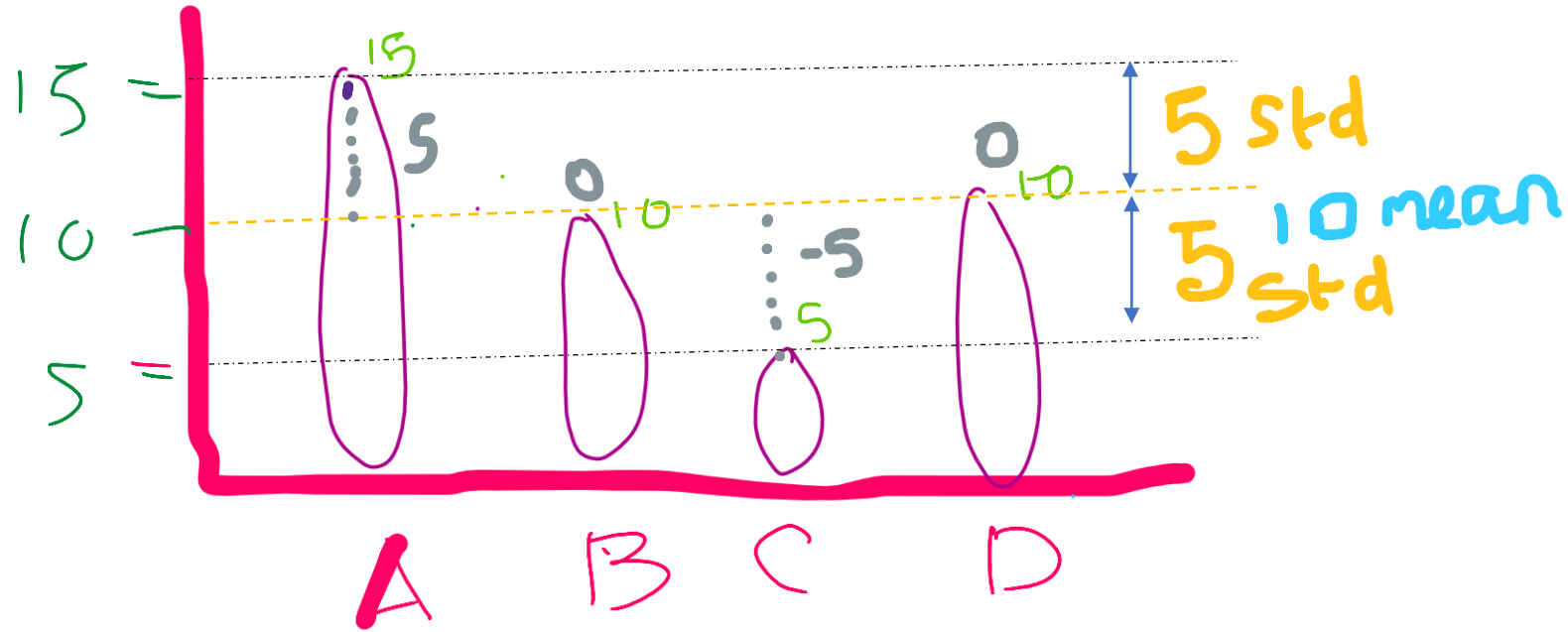
Measure of spread | Standard Deviation

Find MEAN

$$\text{Mean} = \frac{600 + 470 + 170 + 430 + 300}{5} = \frac{1970}{5} = 394$$

So Mean (average) height is 394 mm





$$\text{Mean} = \frac{15 + 10 + 5 + 10}{4} = 10$$

$$\text{Variant} = \frac{5^2 + 0^2 + (-5)^2 + (0)^2}{4} = 25$$

$$\text{Std} = \sqrt{25} = 5$$

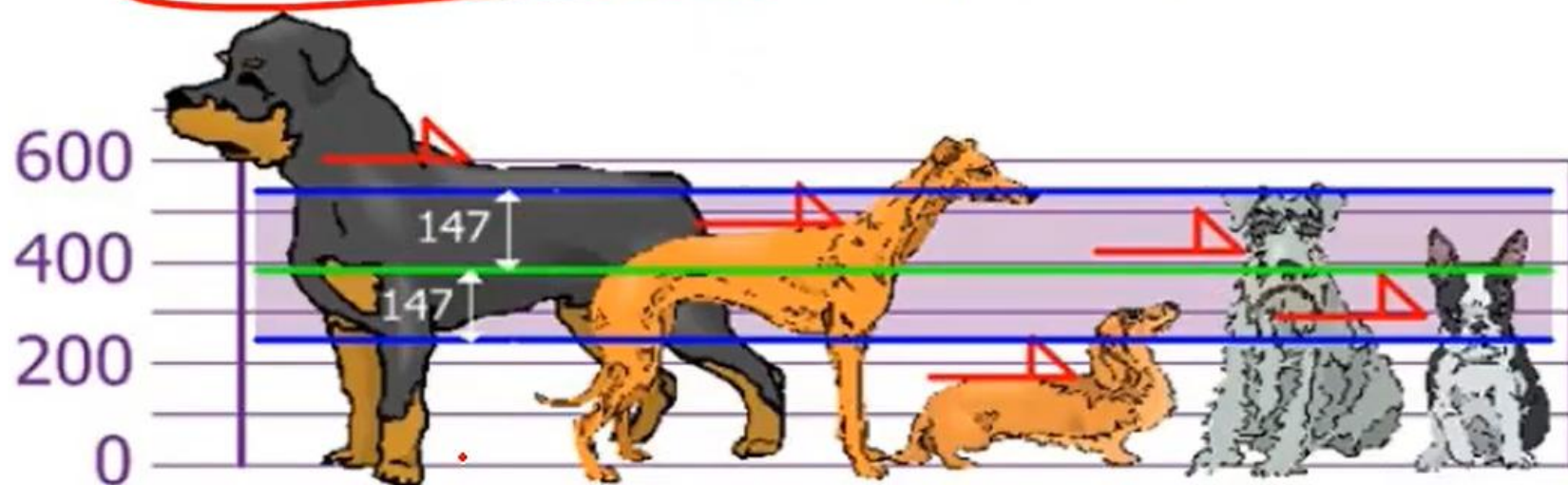
Measure of spread | Standard Deviation

STANDARD DEVIATION (σ)

Standard Deviation = square root of Variance

$$\sigma = \sqrt{21,704} = 147.32... = 147\text{mm}$$

Standard Deviation is useful. Now we can show which heights are within one Standard Deviation (147mm) of the Mean:



Rottweilers **are** tall dogs and Dachshunds **are** a bit short

Var \Rightarrow var
 μ

St \Rightarrow var
 \checkmark