

## Isabella's Question

Why do we 'add one' in the formula for finding the median?

Consider a set of values already arranged in order of size:

$1^{\text{st}}$   $m^{\text{th}}$   $N^{\text{th}}$   
{34, 42, 55, .....79, .....88, 89, 95}

Where  $N$  is the number of values and the  $m^{\text{th}}$  term is the median.

The difference between  $m$  and 1 must be the same as the difference between  $m$  and  $N$

$$m - 1 = N - m$$

$$2m - 1 = N$$

$$2m = N + 1$$

$$m = \frac{N + 1}{2}$$