



## Maths in Action: Solution to Problem 3

### Transcript

OK, so in this example, the four hundred students are a population, and the sample is the ten students for whom we have data.

### Working

#	Distance
1	5 km
2	2 km
3	10 km
4	7 km
5	2 km
6	5 km
7	5 km
8	4 km
9	3 km
10	3 km

400 students = population  
10 students = sample



### Transcript

We find the mean by adding all of the data together, and then dividing by the total number of data items. So, we add all the distances together, which gives us forty-six, and then we divide this by the total number of items which is ten. So, the mean distance, also known as the average distance, is four point six kilometres.

### Working

#	Distance
1	5 km
2	2 km
3	10 km
4	7 km
5	2 km
6	5 km
7	5 km
8	4 km
9	3 km
10	3 km

$$\text{mean} = \frac{46}{10}$$
$$= \boxed{4.6 \text{ km}}$$



### Transcript

The median is the middle number. To find this we need to order the data from smallest to largest, like this. Since there are ten items, the middle numbers are in positions five and six. So, the middle numbers are four and five. Then, the median is the average of these two numbers, which is four point five.

### Working

#	Distance	
1	5 km	
2	2 km	
3	10 km	
4	7 km	
5	2 km	
6	5 km	
7	5 km	
8	4 km	
9	3 km	
10	3 km	

median = 4.5 km

2  
2  
3  
3  
④  
⑤  
5  
5  
7  
10



### Transcript

Finally, to find the mode, we need to find the most common number. We can see here that the most common distance is five kilometres, so five kilometres is the mode.

### Working

#	Distance
1	5 km
2	2 km
3	10 km
4	7 km
5	2 km
6	5 km
7	5 km
8	4 km
9	3 km
10	3 km

mode = 5 km

2  
2  
3  
3  
4  
5  
5  
5  
7  
10