

## EFFECT ON MEAN OF ADDING A CONSTANT

### QUESTION 1.

Calculate the mean of the data: 1, 2, 3, 4, 5 manually. Type in your answer below.

### QUESTION 2.

Enter the data 1, 2, 3, 4, 5 in the yellow boxes in the GeoGebra file, then click "Raw Data Calculations".

What is the mean of the data?

### QUESTION 3.

Enter the number 5 in the purple box in the GeoGebra file. Click "Modified Data Calculations".

How is the modified dataset different to the raw dataset?

- Each element is 5 bigger
- The modified dataset has more elements in it
- There is no difference

### QUESTION 4.

What is the mean of the modified dataset?

### QUESTION 5.

How is the mean of the modified dataset different to the mean of the raw dataset?

- It's no different
- The mean of the modified dataset is less than the mean of the raw dataset
- The mean of the modified dataset is 5 bigger than the mean of the raw dataset

### QUESTION 6.

What effect has adding the number 5 to each element of the dataset had on its mean?

- Its mean has increased by 5.
- Its mean is the same.
- Its mean has decreased.

### QUESTION 7.

Replace the number 5 in the purple box with a different number of your choosing. Do you notice any relationship between this number and how the mean of the dataset changes?

- Whatever number I use, the mean increases by this amount.
- There is no relationship.
- The mean decreases by this amount each time.

### QUESTION 8.

If you were to replace the number in the purple box with the number 20, can you predict how the mean of the modified dataset would be different to the mean of the raw dataset?

Check your prediction using the GeoGebra file.

- The mean of the modified dataset will be 20 bigger than the mean of the raw dataset.
- There will be a decrease in the mean.
- There will be no change.

### QUESTION 9.

Can you now describe the effect adding a common amount to each element in a dataset has on the mean of the dataset?

- The mean increases by this amount.
- The mean decreases by this amount.
- The mean is unchanged.

**QUESTION 10.**

The mean of 100 data items is 55. 10 is added to each item. What will the new mean be?

**QUESTION 11.**

5 is added to each item in a dataset. The mean of this dataset is now 17. What was the mean of the original dataset?

**QUESTION 12.**

The number 20 is added to each of the 5 items in a set of data. What effect will this have on the mean of the data?

- The mean will increase by 20.
- The mean will stay the same.
- The mean will increase by 5.

**QUESTION 13.**

The number 20 is added to each of the 5 items in a set of data. What effect will this have on the sum of the data?

Note: You can try this out with any set of 5 values in the GeoGebra file.

- The sum will increase by 100.
- The sum will not change.
- The sum will increase by 20.

**QUESTION 14.**

A dataset has 10 elements in it. The mean of this dataset is 15. The sum of this dataset is 150.

The number 8 is added to each element of the data. What will the new mean be?

**QUESTION 15.**

A dataset has 10 elements in it. The mean of this dataset is 15. The sum of this dataset is 150.

The number 8 is added to each element of the data. What will the new sum be?