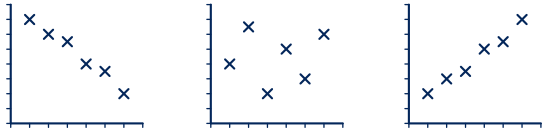
GCSE FOUNDATION · REVISION MAT 2

Correlation and causation

1 Here are three scatter graphs.



Describe the type of correlation shown by each graph.

2 What type of correlation would you expect between

(a) speed and journey time
(b) age and house number
(c) hours worked and pay

3 There is positive correlation between number of firefighters at a fire and damage caused.

Does this mean that number of firefighters at a fire cause damage caused? Explain.

4 Explain the difference between correlation and causation.

5 The table shows some data.

x	10	20	30	40	50
y	45	38	30	26	18

Describe the correlation between x and y. Explain how you can tell without drawing a graph.

6 A newspaper says "Buying more number of firefighters at a fire causes more damage caused."

Give a reason why the newspaper could be wrong.

ANSWERS · REVISION MAT 2

Correlation and causation

1 Graph 1: **negative correlation**
Graph 2: **no correlation**
Graph 3: **positive correlation**

2 (a) **negative**
(b) **no**
(c) **positive**

3 **No**. Correlation does not prove causation.

Both are probably linked to a third factor: the size of the fire.

4 Correlation means two variables change together.

Causation means a change in one actually causes the change in the other.

5 **Negative** correlation: as x increases, y decreases.

6 A third factor (**the size of the fire**) could cause both to rise. The link is correlation, not causation.