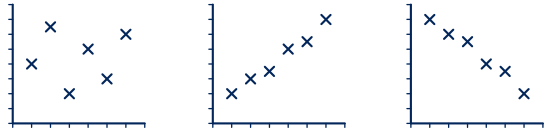
GCSE FOUNDATION · REVISION MAT 3

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) revision time and test score
(b) altitude and temperature
(c) eye colour and height

3 There is positive correlation between shoe size and reading ability in children.

Does this mean that shoe size cause reading ability in children? Explain.

4 Explain the difference between correlation and causation.

5 The table shows some data.

x	3	5	6	8	9
y	40	52	55	70	74

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

6 A newspaper says "Buying more shoe size causes more reading ability in children."

Give a reason why the newspaper could be wrong.

ANSWERS · REVISION MAT 3

Correlation and causation

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

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

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

Both are probably linked to a third factor: age.

4 Correlation means two variables change together.

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

5 **Positive** correlation: as *x* increases, *y* increases.

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

Mr&Mrs MATHS