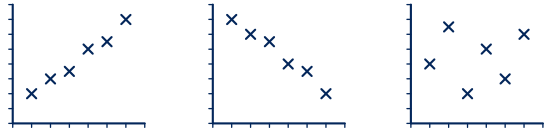
GCSE FOUNDATION · REVISION MAT 1

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) height and arm span
(b) temperature and coats sold
(c) shoe size and test score

3 There is positive correlation between ice cream sales and sunburn cases.

Does this mean that ice cream sales cause sunburn cases? Explain.

4 Explain the difference between correlation and causation.

5 The table shows some data.

x	2	4	5	7	9
y	15	22	26	30	38

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

6 A newspaper says "Buying more ice cream sales causes more sunburn cases."

Give a reason why the newspaper could be wrong.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 1

Correlation and causation

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

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

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

Both are probably linked to a third factor: hot sunny weather.

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 (**hot sunny weather**) could cause both to rise. The link is correlation, not causation.