

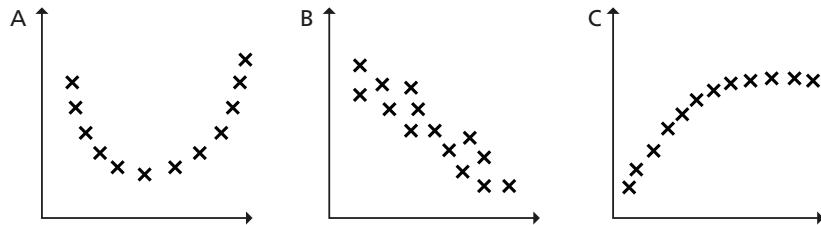
Identify non-linear relationships

1 Are the sequences linear or non-linear?

- a) 30, 50, 70, 90, 110 c) 30, 18, 6, -6, -18
b) 30, 60, 120, 240, 480 d) 30, 60, 90, 120, 150

2 Here are three scatter graphs.

a) Which graphs do not show linear correlation?



b) Match the graphs to the statements.

The points seem to follow a negative trend.

The points seem to follow a negative trend to start with but then a positive trend.

The points start to form a horizontal arrangement later on.

3 A cup of tea is cooling.

Mo measures its temperature each minute and records it in the table.

Time (minutes)	Temperature (°C)
1	21.8
2	21.0
3	19.5
4	18.8
5	18.4
6	18.2
7	18.1
8	18.0
9	18.0
10	18.0

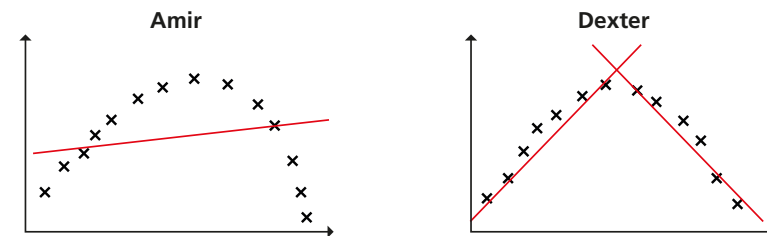
- a) Plot the information on a graph.
b) Discuss with a partner whether the relationship is linear or non-linear.

4 The table shows the average weights of a group of people at different ages.

Age (years)	Weight (kg)
5	18
10	34
15	57
20	69
25	72
30	75
35	76
40	77
45	79
50	79

- a) Plot the data on a graph.
b) Is the graph linear or non-linear? Explain your reasoning.

5 Amir and Dexter are drawing a line of best fit for some data.



Here is their thinking.



Amir

My line of best fit has roughly the same number of points above and below.

I can just draw two lines of best fit.



Dexter

Who do you agree with?

Amir

Dexter

neither

Explain your answer.