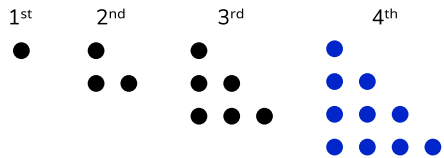


Visualising sequences

Draw the 4th pattern in this sequence.



How many dots would be in the 5th pattern? = 15

Finding terms

Work out the missing terms.

a) 3, 7, 11, 15, 19, 23, ...

b) 1.5, 4, 6.5, 9, 11.5, 14, ...

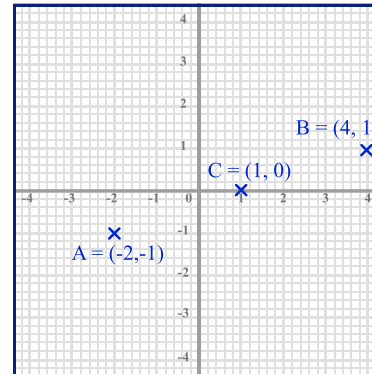
c) 31, 28, 25, 22, 19, 16 ...

Coordinates

a) Write down the coordinates of point A

b) Plot the point B(4, 1)

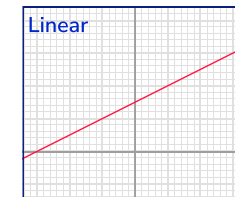
c) Find point C, the midpoint of AB

**Recognising graphs**

Are the graphs below linear, quadratic, cubic, exponential or reciprocal graphs?

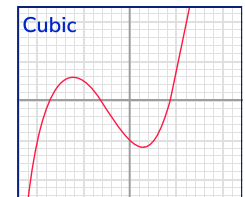
A

Linear



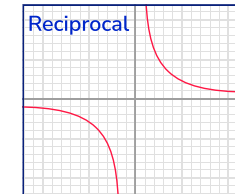
B

Cubic



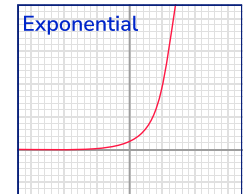
C

Reciprocal

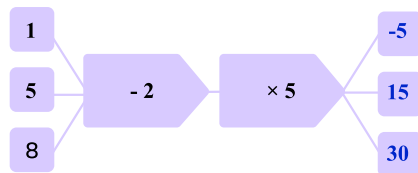
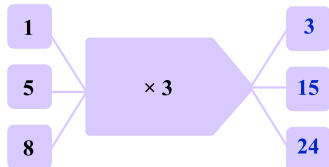


D

Exponential

**Number machines**

Find the outputs of these number machines:

**Special sequences**

Find the missing terms in these sequences:

a) 1, 4, 9, 16, 25, 36, ...

b) 1, 1, 2, 3, 5, 8, 13, 21, ...

c) 3, 6, 12, 24, 48, 96, ...

Finding the nth term

Find the nth term rule for each sequence:

a) 5, 7, 9, 11, 13, ... = $2n + 3$

b) 2, 9, 16, 23, 30, ... = $7n - 5$

c) 21, 19, 17, 15, 13, ... = $23 - 2n$

Term-to-term rules

Describe the term-to-term rule:

a) 5, 8, 11, 14, ... **add 3**

b) 3, -1, -5, -9, ... **subtract 4**

c) 40, 20, 10, 5, ... **halving/divide by 2**

Using the nth term

The nth term for a sequence is $5n - 2$.

a) Find the first three terms of the sequence = 3, 8, 13

b) Find the 20th term of the sequence = 98

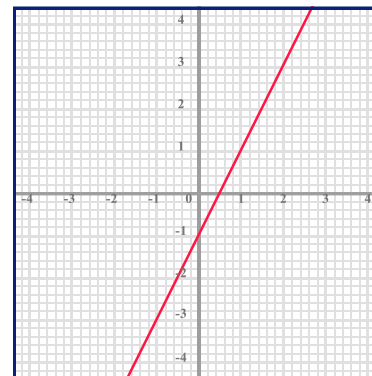
c) Is 169 in this sequence? = No

Linear graphs

a) Find the gradient of the red line. 2

b) Write the equation of the red line in the form $y = mx + c$. $y = 2x - 1$

c) In the form $y = mx + c$ write the equation of a line, which passes through (0, 1) and is parallel to the red line. $y = 2x + 1$

**Quadratic graphs**

Use the table of values to plot the graph of $y = x^2 - 3x - 4$ for $-2 \leq x \leq 5$

x	-2	-1	0	1	2	3	4	5
y	6	0	-4	-6	-6	-4	0	6

