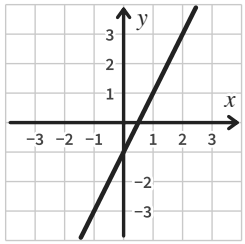
Recognising linear and quadratic graphs

1

Circle the matching equation.



$y = x^2 - 1$ $y = 2x - 1$ $y = -2x - 1$

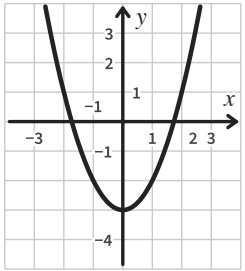
Shape: straight line

Which way: uphill

Crosses the y axis at:

2

Circle the matching equation.



$y = x^2 + 3$ $y = 3x - 3$ $y = x^2 - 3$

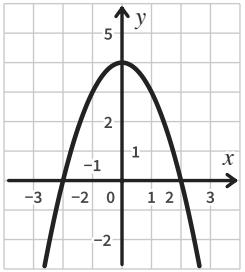
Shape: curve

Which way:

Crosses the y axis at:

3

Circle the matching equation.



$y = -x^2 + 4$ $y = x^2 + 4$ $y = -4x + 4$

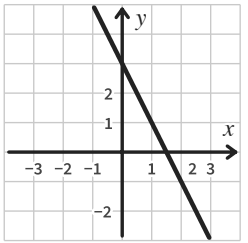
Shape:

Which way:

Crosses the y axis at:

4 *Notice the change!*

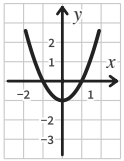
Circle the matching equation.



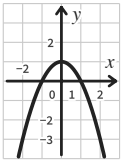
$y = 2x + 3$ $y = -x^2 + 3$ $y = -2x + 3$

5

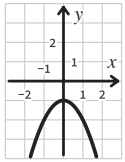
Which graph is $y = -x^2 - 1$?



A



B



C

Graph _____

6

Write **linear** or **quadratic** for each equation.

$y = 5x - 2$

$y = x^2 + 7$

$y = 3 - x^2$

$y = 4x$

7

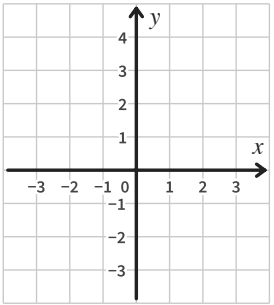
Mia says the graph of $y = x^2 + 5$ is a straight line, because the equation ends in + 5. Explain her mistake.

Which way _____

Crosses the y axis at _____

8

Sketch the graph of $y = x^2 - 2$ on the axes.

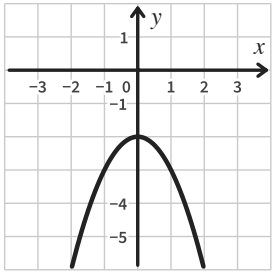


Crosses the y axis at

Recognising linear and quadratic graphs *further practice*

9

Circle the matching equation.

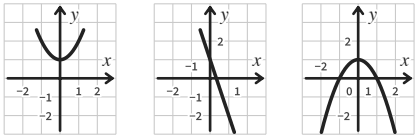


$y = x^2 - 2$ $y = -x^2 - 2$ $y = -x^2 + 2$

Equation _____

10

Write the letter of the graph next to each equation.



A B C

$y = 1 - x^2$ _____

$y = x^2 + 1$ _____

$y = 1 - 3x$ _____

11

Two pairs of these graphs cross the y axis at the same point. Find the pairs.

A $y = 3x + 5$

B $y = x^2 - 5$

C $y = 5 - x^2$

D $y = -2x - 5$

_____

_____

Pairs _____

12

A graph is a straight line.
It goes downhill and crosses the y axis at 4. Write down a possible equation for it.

_____

_____

Equation _____

13

A taxi costs £3, plus £2 for each mile. The cost is $C = 2d + 3$ pounds for d miles. Is the graph of C against d a straight line or a curve? Where does it cross the C axis?

_____

_____

Answer _____

14

The area of a square with sides of x cm is $y = x^2$ cm^2. Kai says the graph of y against x is a straight line.
Explain why he is wrong.

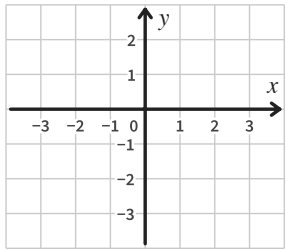
_____

_____

Answer _____

15

Sketch the graph of $y = 1 - x^2$ on the axes.



_____

Crosses the y axis at _____

16

Ava says the graphs of $y = x^2 + 2$ and $y = -x^2 + 2$ never meet.
Is she right? Explain.

_____

_____

Answer _____