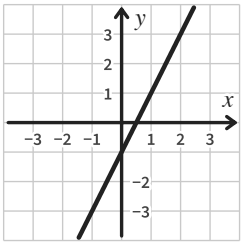
Recognising linear and quadratic graphs

ANSWERS

1

Circle the matching equation.



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

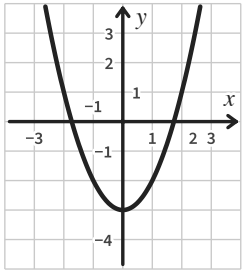
Shape: straight line

Which way: uphill

Crosses the y axis at: -1

2

Circle the matching equation.



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

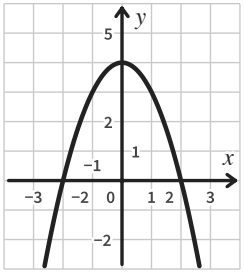
Shape: curve

Which way: U shape

Crosses the y axis at: -3

3

Circle the matching equation.



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

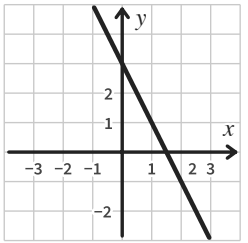
Shape: curve

Which way: upside down

Crosses the y axis at: 4

4 *Notice the change!*

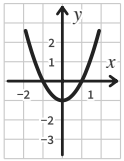
Circle the matching equation.



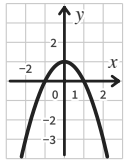
$y = 2x + 3$ $y = -x^2 + 3$ **$y = -2x + 3$**

5

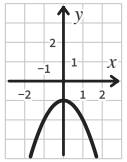
Which graph is $y = -x^2 - 1$?



A



B



C

$-x^2$ so upside down; crosses at -1

Graph C

6

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

$y = 5x - 2$ linear

$y = x^2 + 7$ quadratic

$y = 3 - x^2$ quadratic

$y = 4x$ linear

7

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

the x^2 makes it a curve

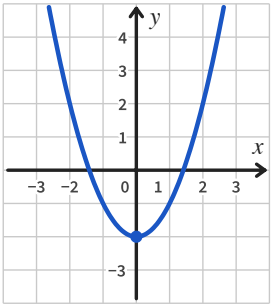
+ 5 is where it crosses the y axis

Which way U shape

Crosses the y axis at 5

8

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



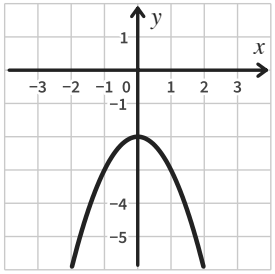
Crosses the y axis at -2

Recognising linear and quadratic graphs *further practice*

ANSWERS

9

Circle the matching equation.

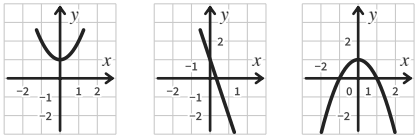


$y = x^2 - 2$ $\quad$ **$y = -x^2 - 2$** $\quad$ $y = -x^2 + 2$

Equation $y = -x^2 - 2$

10

Write the letter of the graph next to each equation.



$y = 1 - x^2$ — C

$y = x^2 + 1$ — A

$y = 1 - 3x$ — B

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 $y = -2x - 5$

A and C cross at 5

B and D cross at −5

Pairs A and C, B and D

12

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

a negative number in front of x

and + 4 on its own

Equation $y = -2x + 4$

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?

no d^2, so a straight line

when $d = 0$, $C = 3$

Answer a straight line, at 3

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.

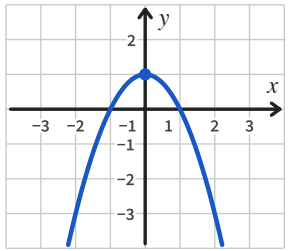
it has an x^2, so it is quadratic

a quadratic graph is a curve

Answer it is a curve

15

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



Crosses the y axis at 1

16

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

both cross the y axis at 2

so they meet at (0, 2)

Answer No