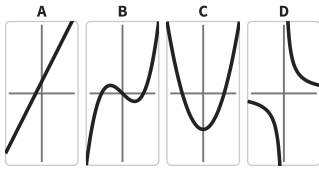


Interleaved: recognising graphs

ANSWERS

1

Which sketch shows $y = x^2 - 3$?



Which method? ☐ Linear ☒ Quadratic ☐ Cubic
☐ Reciprocal

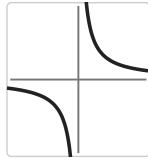
the highest power is 2: a U shaped curve

Answer C

2

Which equation could this graph have?

$y = 2x$ $y = x^2 + 2$ $y = \frac{2}{x}$ $y = x^3 + 2$



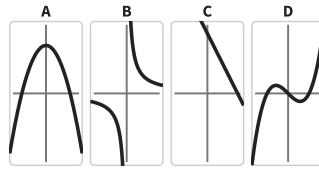
Which method? ☐ Linear ☐ Quadratic ☐ Cubic
☒ Reciprocal

two curves that never touch the axes

Answer $y = \frac{2}{x}$

3

Which sketch shows $y = 5 - 2x$?



Which method? ☐ Linear ☐ Quadratic ☐ Cubic
☒ Reciprocal

highest power 1: a line, going down

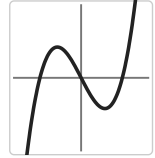
Answer C

4

Which equation could this graph have?

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

$y = \frac{3}{x}$



Which method? ☐ Linear ☐ Quadratic ☒ Cubic
☐ Reciprocal

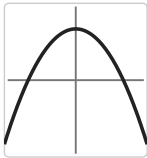
an S shape: the highest power is 3

Answer $y = x^3 - 3x$

5

Which equation could this graph have?

$y = 4 - x$ $y = 4 - x^2$ $y = \frac{4}{x}$ $y = 4 - x^3$



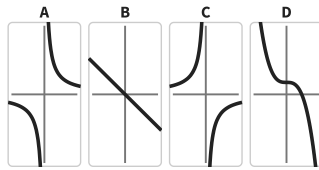
Which method? ☐ Linear ☒ Quadratic ☐ Cubic
☐ Reciprocal

an upside down U: a quadratic

Answer $y = 4 - x^2$

6

Which sketch shows $y = -\frac{1}{x}$?



Which method? ☐ Linear ☐ Quadratic ☐ Cubic
☒ Reciprocal

reciprocal; the minus moves the two curves

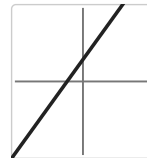
Answer C

7

This graph crosses the y axis at 2.

Which equation could it have?

$y = x^2 + 2$ $y = 3x + 2$ $y = \frac{2}{x}$ $y = x^3 + 2$



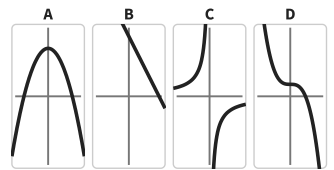
Which method? ☐ Linear ☐ Quadratic ☐ Cubic
☒ Reciprocal

a straight line: highest power 1

Answer $y = 3x + 2$

8

Which sketch shows $y = 1 - x^3$?



Which method? ☐ Linear ☐ Quadratic ☒ Cubic
☐ Reciprocal

highest power 3; the minus turns it round

Answer D

Interleaved: recognising graphs further practice

ANSWERS

9

A graph is symmetrical about the y axis and crosses the x axis at -2 and 2. Which equation could it have?

$y = 2x + 4$ $y = 4 - x^2$ $y = x^3 - 4$
 $y = \frac{4}{x}$

*only a quadratic is symmetrical like this;
 $4 - x^2 = 0$*

Answer $y = 4 - x^2$

10

Which of these graphs never crosses either axis?

$y = x^3$ $y = x^2 + 1$ $y = \frac{6}{x}$ $y = x + 6$

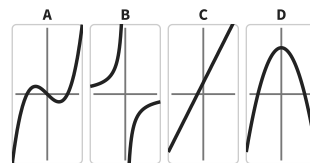
x can never be 0, and $\frac{6}{x}$ is never 0

Answer $y = \frac{6}{x}$

11

Match each equation to its sketch. One sketch is not used.

1: $y = 2x + 1$ 2: $y = 4 - x^2$
3: $y = x^3 - 3x$



a line, an upside down U and an S shape

Answer 1 C, 2 D, 3 A

12

A curve comes up from the bottom left and goes off at the top right. Which equation could it have?

$y = x + 2$ $y = x^2 + 2$ $y = x^3 + 2$
 $y = \frac{2}{x}$

*curved, low on the left and high on the right:
a cubic*

Answer $y = x^3 + 2$

13

What type of graph do these values make? Give a reason.

x	-2	-1	0	1	2
y	5	2	1	2	5

*the y values are symmetrical about $x = 0$:
 $y = x^2 + 1$*

Answer quadratic

14

What type of graph do these values make? Find its equation.

x	0	1	2	3	4
y	3	5	7	9	11

y goes up by 2 each time, starting at 3

Answer linear, $y = 2x + 3$

15

What type of graph do these values make? Find its equation.

x	1	2	3	4	6
y	12	6	4	3	2

x × y is always 12

Answer reciprocal, $y = \frac{12}{x}$

16

Ben says the graph of $y = x^3 + x^2$ is a quadratic because the equation has x^2 in it. Explain why he is wrong.

the highest power of x decides: here it is 3

Answer it is a cubic