

Code Breaker: Quadratic Graphs

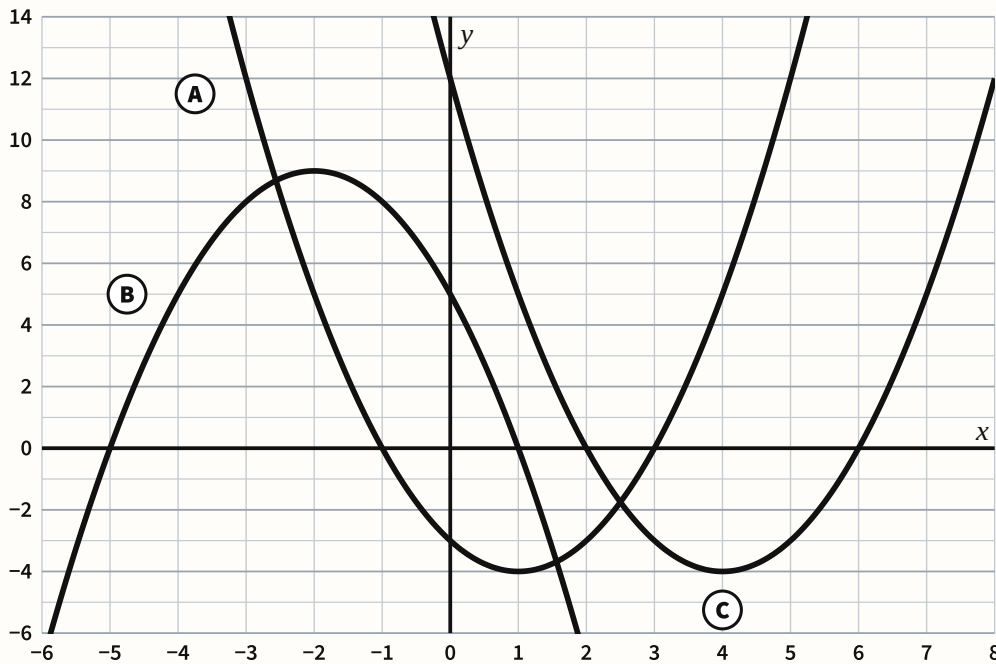
The Maths Habit



CRACK THE CODE

Use the three curves to find roots, intercepts, turning points and lines of symmetry. The last three tiles need a table of values worked out. Look your answer up in the **Code Box** and write the letter it unlocks in the white box. Collect all thirteen letters in the strip, then unscramble them to find the answer.

13 CLUES



- (A) $y = x^2 - 2x - 3$
- (B) $y = 5 - 4x - x^2$
- (C) $y = x^2 - 8x + 12$

1

Curve A:
the positive root

2

Curve B:
the negative root

3

Curve C: the y coordinate
of the turning point

4

Curve B: the largest
value y can take

5

Curve B: the line of
symmetry is $x = ?$

6

Curve A crosses the
y axis at $(0, ?)$

7

Curve C crosses the
y axis at $(0, ?)$

8

Curve C: the line of
symmetry is $x = ?$

9

Use curve C to solve
 $x^2 - 8x + 12 = 5$.
The larger solution

10

Curve A: the x coordinate
of the turning point

11

$y = x^2 - 4x + 1$
Find y when $x = -2$

12

$y = 2x^2 + x - 6$
Find y when $x = -2$

13

$y = (x + 4)(x - 1)$
Find y when $x = -2$

YOUR LETTERS

UNSCRAMBLE Clue: it floats over the countryside (3, 3, 7) _____

CODE BOX

-12 = F

-11 = W

-6 = L

-5 = H

-4 = R

-3 = T

-2 = B

-1 = K

0 = I

1 = O

2 = Y

3 = A

4 = N

5 = P

6 = S

7 = L

8 = D

9 = O

12 = O

13 = A

