

Quadratic functions and expressions

Short activity

All, some or none?

For each question there are 5 related statements. In each case decide which of them are true.

1. The quadratic $y = x^2 - 2x - 3$:
 - a. rearranges to $y = (x - 1)^2 - 2$
 - b. Has a y intercept at -3
 - c. factorises to $y = (x - 3)(x + 1)$
 - d. has an axis of symmetry at $x = 1$
 - e. has a minimum value of -3

2. The quadratic $y = (x + 1)^2 + 2$:
 - a. rearranges to $y = (x + 1)(x + 2)$
 - b. has a minimum value of 2
 - c. always has positive values for y
 - d. has an axis of symmetry
 - e. doesn't cross the x axis

3. All quadratics:
 - a. have an axis of symmetry
 - b. cross the x axis
 - c. can be arranged to a completed square format
 - d. cross the y axis once
 - e. have a minimum value

Challenge: For any statements that are false in question 3, give counter examples and explain when and why they are false.