Meet the Quadratic

QE01-V1 · storyboard · QE01 Meet the quadratic. Read each picture with its sentences.

Picture 1

Write $5 + 2x^2 = 3x$ in standard form, and name a, b and c.

$$2x^2 - 3x + 5 = 0$$

subtract $3x$, then put the terms in order

$$\boxed{2x^2} \quad \boxed{-3x} \quad \boxed{+5}$$

$a = 2$ $b = -3$ $c = 5$

1. Write 5 plus 2 x squared equals 3 x in standard form, and name a, b and c.
2. Subtract 3 x from both sides, so the right side is 0.
3. Then put the terms in order: x squared, then x, then the number.
4. 2 x squared, minus 3 x, plus 5, equals 0.
5. Now read the coefficients.
6. a is 2.
7. b is negative 3: the minus sign belongs to b.
8. And c is 5.

Picture 2

Is $x = -3$ a root of $x^2 + 2x - 3 = 0$?

$$(-3)^2 + 2(-3) - 3$$ brackets round -3

$$= 9 - 6 - 3$$

$$= \boxed{0}$$ so -3 is a root

9. Is x equals negative 3 a root of x squared, plus 2 x, minus 3, equals 0?
10. Put negative 3 in for x, in brackets.
11. Negative 3 squared is 9, and 2 times negative 3 is negative 6.
12. It comes to 0, so negative 3 is a root.

Picture 3

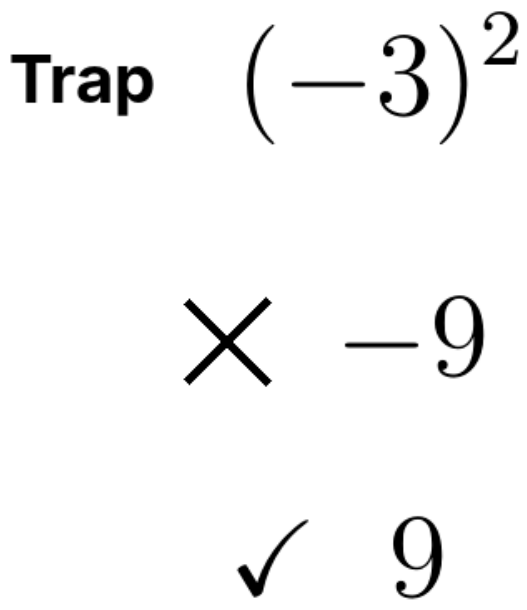
Trap $x^2 + 6 = 5x$

$\times$ $b = 5$

✓ $x^2 - 5x + 6 = 0, \quad b = -5$

13. Watch for the trap: in x squared plus 6 equals 5 x, b is not 5.
14. Standard form first: the 5 x moves over and becomes minus 5 x, so b is negative 5.

Picture 4



15. Another trap: negative 3 squared is not negative 9.
16. It is negative 3 times negative 3, which is positive 9.
17. Always put a negative number in brackets.