Mathematics

Number of solutions

Mr Coward

Try this

Solve the following quadratic equations, where possible.

What do you notice?

$$2(x + 3)^2 + 5 = 23$$

$$2(x + 1)^2 + 5 = 23$$

$$2(x + 1)^2 + 5 = -23$$

What is the same and what is different?

Independent task

1) Determine which quadratics have two solutions, one solution, no solution.

a) $a^2 = 11$ b) $b^2 = -11$ c) $0 = c^2$ d) $25 = 5d^2 - 25$

e) $8e^2 - 5 = 27$ f) $-11 - 4f^2 = 0$ g) $-11 - 4g^2 = -11$ h) $11 - 4h^2 = 0$

Two solutions	One solution	No solution

Independent task

2) I think of a positive number. I square it then add on 11. I then divide it by 3. My answer is 20. What was my original number

3) I think of a one digit number. I take away ten, I then square it. I multiply it by three, then add on 7. My answer is 250.

What was my original number?