

Class 10 Mathematics - Quadratic Equations

Name: _____

Date: _____

Advanced Worksheet 2

Questions

1. The product of two consecutive positive integers is 462. Find the integers.
2. The area of a rectangular garden is 528 m². Its length is 11 m more than its breadth. Find its dimensions.
3. The square of a positive number exceeds five times the number by 84. Find the number.
4. The product of two consecutive even integers is 168. Find the integers.
5. The area of a square is 729 cm². Find its side length using a quadratic equation.
6. Explain why quadratic equations are useful in geometry problems.

Answer Key

1.

Let smaller integer = x

$$x(x + 1) = 462$$

$$x^2 + x - 462 = 0$$

$$(x + 22)(x - 21) = 0$$

Integers = 21 and 22

2.

Let breadth = x

Length = $x + 11$

$$x(x + 11) = 528$$

$$x^2 + 11x - 528 = 0$$

$$(x + 33)(x - 16) = 0$$

Breadth = 16 m

Length = 27 m

3.

Let number = x

$$x^2 = 5x + 84$$

$$x^2 - 5x - 84 = 0$$

$$(x - 12)(x + 7) = 0$$

Positive number = 12

4.

Let smaller even integer = x

$$x(x + 2) = 168$$

$$x^2 + 2x - 168 = 0$$

$$(x + 14)(x - 12) = 0$$

Integers = 12 and 14

5.

Let side = x

$$x^2 = 729$$

$$x^2 - 729 = 0$$

$$(x - 27)(x + 27) = 0$$

Side = 27 cm

6.

Many geometric quantities involve area, which contains squared terms.

