

Algebra RH

Essential Question: How do we solve quadratic equation word problems?

Do Now: Solve the following word problem using a quadratic equation.

If the square of a number is added to 5 times the number, the result is 36. Find the number.

Solving Word Problems using Quadratic Equations

1. Find two positive numbers whose ratio is 2:3 and whose product is 600.
2. When the first of three positive consecutive integers is multiplied by the third, the result is one less than six times the second. Find the integers.
3. The sum of two numbers is 10. The sum of their squares is 52. Find the numbers.
4. The perimeter of a rectangle is 20 in., the area is 16 in^2 . Find the dimensions of the rectangle.

Show all work on a separate sheet of paper.

1. One number is 11 more than another. The product of the two numbers is -24. Find both numbers.
2. The length of a square is increased by 2 and the adjacent side is decreased by 2. The area of the resulting rectangle is 32 square meters. Find the length of the side of the square.
3. The product of two consecutive negative integers is 20. What are the numbers?
4. A garden is 6 m by 4 m. If the area is doubled by increasing its dimensions by the same amount, find the number of meters each dimension will be increased by.
5. The length of one leg of a right triangle is 7 more than the other leg. If the hypotenuse is 13 meters, find the length of the legs.
6. If the length of a rectangle is 3 times its width. If the width is decreased by 1 and the length is increased by 3, the new area of the rectangle is 72 ft^2 . Find the dimensions of both rectangles.
7. The sum of two numbers is 14. The difference of their squares is 56. Find both numbers.
8. Find two positive numbers whose ratio is 4:5 and whose product 180.