

Name: _____

Date: _____

Algebra I

Directions: Solve algebraically using let statements and a quadratic equation.

1. The largest of two positive numbers is 6 more than the smaller. The product of the numbers is 40. Find the numbers.
2. The square of a number exceeds the number by 42. Find the number.
3. The product of two consecutive even integers is 80. Find the integers.
4. The sum of the squares of two positive consecutive integers is 113. Find the integers.

5. When a certain number is added to its square, the result is 20. Find the number.

6. In the orchestra section of a theater, there are 200 seats. The number of seats in each row is 10 more than the number of rows. Find the number of rows.

7. The product of two consecutive integers is 110. Find the integers.

8. If the length of one side of a square is increased by 4 inches and the length of an adjacent side is decreased by 1 inch, the area of the resulting rectangle is 36 square inches. Find the length of the side of the square.

9. The length of a rectangle is double its width. If the width is diminished by 1 inch and the length is increased by 6 inches, the area of the new rectangle is 90 square inches. Find the dimensions of the original rectangle.

10. The number of square units in the area of a square is double the number of units that are in its perimeter. Find the length of a side of the square.

11. A rectangle is 7 inches long and 9 inches wide. If each dimension is increased by the same number of inches, a new rectangle is formed whose area is 36 square inches more than the area of the original rectangle. By how many inches was each dimension increased?