

Word Problems for Quadratics

1. Find two positive consecutive integers such that the sum of their squares is 85.
2. If the product of two positive consecutive odd integers is 195, find the integers.
3. The sum of two integers is 18 and the sum of their squares is 170. Taking one number as x , form an equation and solve it to find the numbers.
4. NO QUESTION # 4
5. Two squares have sides $(x + 6)$ cm and $(2x + 1)$ cm. The sum of their areas is 697 sq. cm. Express this as an algebraic expression and solve the equation to find the areas of the squares.
6. A rectangle of area 105 cm² has a length equal to x cm. If the perimeter is 44 cm, find the actual dimensions of the rectangle.
7. The length of the original rectangle is 3 cm more than its width. If the length is increased by 1 cm and the width is increased by 3 cm, the new area is double the area of the original rectangle. Find the dimensions of the original rectangle.
8. A rectangular garden 10 m by 16 m is to be surrounded by a concrete sidewalk of uniform width. The area of the sidewalk is 120 sq. meters. What is the width of the sidewalk?
9. The perimeter of a rectangular parcel of land is 68 m and the length of its diagonal is 26 m. What is the area of this parcel?
10. A 40 cm long wire is bent to form a right-angled triangle with a hypotenuse of 17 cm. Find the area of the triangle formed by this wire.
11. In an auditorium, the number of rows was equal to the number of seats in each row. If the number of rows is increased by 6 and the number of seats in each row is increased by 2, then the total number of seats is increased by 172. How many rows were there?

Answers

1. 6, 7 2. 13, 15 3. 7, 11
5. $(x + 6)^2 + (2x + 1)^2 = 697$; 256 sq. cm, 441 sq. cm.
6. cm; = 44; 15 cm, 7 cm
7. length = 7 cm, breadth = 4 cm
8. $(16 + 2x)(10 + 2x) - 16 \cdot 10 = 120$; 2 m
9. 240 m². 10. 60 cm² 11. 20