

Name : _____

Word Problems Involving Quadratic Equations

- ① If one side of a square is increased by 10 m and another side is increased by 5 m, a rectangle is formed with an area that measures three times the area of the square. Find the length of the side of the square.

- ② Find two consecutive odd integers whose product is 675.

- ③ The sum of the ages of a father and his son is 42 years. The product of their ages is 185. Find their ages.

- ④ The length of a room is 8 cm greater than its width. If both the length and the width are increased by 2 cm, the area increases by 60 cm^2 . Find the old and new dimensions of the room. Also, find the difference in their dimensions.

- ⑤ Write a quadratic equation in the form $ax^2 + bx + c = 0$, whose two roots are 2 and 5.

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Answers

- ① If one side of a square is increased by 10 m and another side is increased by 5 m, a rectangle is formed with an area that measures three times the area of the square. Find the length of the side of the square.

10 m

- ② Find two consecutive odd integers whose product is 675.

25, 27

- ③ The sum of the ages of a father and his son is 42 years. The product of their ages is 185. Find their ages.

5 years, 37 years

- ④ The length of a room is 8 cm greater than its width. If both the length and the width are increased by 2 cm, the area increases by 60 cm^2 . Find the old and new dimensions of the room. Also, find the difference in their dimensions.

Old dimension = $18\text{m} \times 10\text{m}$, new dimension = $20\text{m} \times 12\text{m}$, difference = 60m^2

- ⑤ Write a quadratic equation in the form $ax^2 + bx + c = 0$, whose two roots are 2 and 5.

$x^2 - 7x + 10 = 0$