

QUADRATIC EQUATIONS

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10th Maths - Chapter 4

This is Problem-2.1 from Exercise 4.1

1. Represent the following situations in the form of quadratic equations :
(i) The area of a rectangular plot is 528 m^2 . The length of the plot (in metres) is one more than twice its breadth. We need to find the length and breadth of the plot

Solution: :

Required quadratic equation is :

$$2x^2 + x - 528 = 0 \quad (1)$$

$$2x^2 + 33x - 32xx - 528 = 0 \quad (2)$$

$$x(2x + 33) - 16(2x + 33) = 0 \quad (3)$$

$$(2x + 33)(x - 16) = 0 \quad (4)$$

$$x - 16 = 0 \text{ or } 2x + 33 = 0 \quad (5)$$

$$x = 16 \text{ or } x = 2 - 33 \quad (6)$$

$$(7)$$

Hence, Length of plot is $2x+1=2 \times 16+1=33\text{m}$ and breadth is 16 m