

Quadratic Equations

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Class 10th Maths - Chapter 4

This is Problem-1(i) from Exercise 4.3

1. Find the roots of the quadratic equations

$$(i) 2x^2 - 7x + 3 = 0$$

Solution:

Given Data:

$$2x^2 - 7x + 3 = 0$$

(1)

(2)

(3)

Quadratic formula:

(4)

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \quad (5)$$

(6)

$$x = \frac{-(-7) \pm \sqrt{(-7)^2 - 4 \times 2 \times 3}}{2 \times 2} \quad (7)$$

(8)

$$x = \frac{7 \pm \sqrt{49 - 24}}{4} \quad (9)$$

(10)

$$x = \frac{7 \pm \sqrt{25}}{4} \quad (11)$$

(12)

1st condition

$$x = \frac{7 + 5}{4} \quad (13)$$

$$x = \frac{12}{4} \quad (14)$$

$$x = 3 \quad (15)$$

(16)

2nd condition

$$x = \frac{7 - 5}{4} \quad (17)$$

$$x = \frac{2}{4} \quad (18)$$

$$x = \frac{1}{2} \quad (19)$$

(20)

Therefore:

$$x = \frac{1}{2} \quad (21)$$

$$x = 3 \quad (22)$$