

Quadratic equations

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10th Maths - Chapter 4

This is Problem-1(iii) from Exercise 4.2

1. Solve $(\sqrt{2}x^2 + 7x + 5\sqrt{2}) = 0$

Solution:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \quad (1)$$

$$x = \frac{-7 \pm \sqrt{-7^2 - 4 \times \sqrt{2} \times 5\sqrt{2}}}{2 \times \sqrt{2}} \quad (2)$$

$$x = \frac{-7 + \sqrt{49 - 40}}{2\sqrt{2}} \quad (3)$$

$$x = \frac{-7 + \sqrt{9}}{2\sqrt{2}} \quad (4)$$

$$x = \frac{-4}{2\sqrt{2}} \quad (5)$$

$$x = \frac{-4 \times 2\sqrt{2}}{2\sqrt{2} \times 2\sqrt{2}} \quad (6)$$

$$x = \frac{-8\sqrt{2}}{8} \quad (7)$$

$$x = -\sqrt{2} \quad (8)$$

$$(9)$$

or

$$x = \frac{-7 - \sqrt{49 - 40}}{2\sqrt{2}} \quad (10)$$

$$x = \frac{-7 - \sqrt{9}}{2\sqrt{2}} \quad (11)$$

$$x = \frac{-10}{2\sqrt{2}} \quad (12)$$

$$x = \frac{-10 \times 2\sqrt{2}}{2\sqrt{2} \times 2\sqrt{2}} \quad (13)$$

$$x = \frac{-20\sqrt{2}}{8} \quad (14)$$

$$x = \frac{-5}{\sqrt{2}} \quad (15)$$