

Chapter-4 Quadratic Equations

Section 1

1. Standard form of quadratic equation is _____
2. Quadratic formula was given was
(a) Bramhagupta (b) Sridharacharya (c) Bhaskara
3. Check whether $(x - 5)^2 + 4 = 5x - 11$ is a quadratic equation
4. If m is root of a quadratic equation in x , then $x = m$ is called _____
5. The condition for finding real and distinct roots is $b^2 - 4ac$ _____ 0, where a, b and c have their usual meaning.
6. Find the roots of $x^2 - 5x + 6 = 0$ by factorization.
7. Is there a quadratic equation which has no real roots? give an example.
8. Find the discriminant of quadratic equation $3y^2 - 4y + 2 = 0$ and hence find the nature of roots

Section 2

9. Find roots by factorisation $5x^2 - 2\sqrt{10}x + 2 = 0$
10. If the roots of the quadratic equation $ax^2 + bx + c = 0$ are equal, then show that $b^2 = 4ac$.
11. Solve $\frac{a}{x-b} + \frac{b}{x-a} = 2$, $x \neq a, b$
12. Solve for x , $\frac{1}{x+a+b} = \frac{1}{x} + \frac{1}{a} + \frac{1}{b}$

Section 3

13. Find roots by method of completing the squares $3x^2 - 10x + 3 = 0$
14. Find roots by method of completing the squares $2x^2 - 2x + 1 = 0$. Do we get any real roots? If no why?

Section 4

15. A shopkeeper buys a number of books for Rs 80. If he had bought 4 more books for the same amount each would have cost Re1 less. How many books did he buy?

16. Out of a number of birds, one fourth the number are moving about in lotus plants; $\frac{1}{9}$ th couples (along) with $\frac{1}{4}$ th as well as 7 times the square root of the number move on a hill, 56 birds remain in vakula trees. What is the total no. of birds?
17. Two pipes running together can fill a cistern in 35 minutes. If the bigger pipe can fill the cistern 24 minutes faster than the smaller pipe find the time taken by each pipe separately to fill it.

Q 1-8 1 mark each, Q 9-12 2 marks each, Q 13-14 3marks each, Q15-17 6marks each

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Time 1 h 30 min