



TARGET MATHEMATICS
THE EXCELLENCE KEY
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CLASS X

MATHS

Section A

- 1 Find the discriminant of quadratic equation $100x^2 - 20x + 1 = 0$.
[Ans : 0]
- 2 If the equation $2x^2 + px + \frac{9}{2} = 0$ has real roots, then find the value of p. [Ans : ± 6]

Section B

- 3 Solve for the value of x: $ax^2 + (4a^2 - 3b)x - 12ab = 0$.
[Ans : $-4a; 3b/a$]

- 4 The sum of a number and its reciprocal is $\frac{122}{11}$. Find the number. [Ans: 11]
- 5 Find the roots of the quadratic equation $x^2 - 3x - 10 = 0$ by completing square.

Section C

- 6 Solve for x, $\frac{1}{2x-3} + \frac{1}{x-5} = 1$ [Ans: $\frac{8 \pm 3\sqrt{2}}{2}$]
- 7 Find the value of k, such that the quadratic equation has equal roots $x^2 - 2x(1+3k) + 7(3+2k) = 0$ [Ans: $k = 2, -\frac{10}{9}$]
- 8 Out of a group of swans, $\frac{7}{2}$ times the square root of the total number are playing on the shore of a tank. The two remaining ones are playing in the water. Find the total number of swans. (Ans: 16)

Section D

- 9 Find the roots of the quadratic equation $12abx^2 - (9a^2 - 8b^2)x - 6ab = 0$ by applying quadratic formula. [ans: $\frac{3a}{4b}; \frac{-2b}{3a}$]

10 Sum of the areas of two squares is 468 sq m. If the difference of their perimeter is 24. Find the sides of the two squares.

[*Ans*:12m;18m]