Class – 10th **Chapter-3** **Subject Maths**

Worksheet-08 **Polynomials**

Find the nature of the roots of the following quadratic equations. If the real roots exist, find them:

1. $2x^2 - 3x + 5 = 0$
2. $3x^2 - 4\sqrt{3}x + 4 = 0$
3. $2x^2 - 6x + 3 = 0$
4. $4\sqrt{3}x^2 + 5x - 2\sqrt{3} = 0$.

Find the values of *k* for each of the following quadratic equations, so that they have two equal roots.

5. $2x^2 + kx + 3 = 0$
6. $kx\,(x - 2) + 6 = 0$

Find the values of *k* for each of the following quadratic equations, so that they have real and distinct roots.

7. $x^2 - kx + 9 = 0$
8. $kx^2 + 2x + 1 = 0$
9. Find the discriminant of the quadratic equation $3\sqrt{3}x^2 + 10x + \sqrt{3} = 0$
10. Find the roots of the following equation: $\frac{1}{x+4} - \frac{1}{x-7} = \frac{11}{30}$; $x \neq -4, 7$.