Quadratic Equation Worksheet 4

1. Check whether the equation $6x^2 – 7x + 2 = 0$ has real roots and if it has, find them by the method of completing the squares.

2. Find two consecutive odd positive integers, the sum of whose squares is 290.

3. Find the discriminant of the quadratic equation $2x^2 + 4x - 3 = 0$, and hence find the nature of its roots.

4. Find whether the equation $x^2 + 5\sqrt{5}\ x – 70 = 0$ has real roots. If real roots exist, find them.

5. Is it possible to design a rectangular mango grove whose length is twice its breadth, and the area is 800 m^2? If so, find its length and breadth.

6. Find the nature of roots of the quadratic equation $x^2 – 39x – 126 = 0$.

7. At present Asha's age (in years) is 2 more than the square of her daughter Nisha's age. When Nisha grows to her mother's present age, Asha's age would be one year less than 10 times the present age of Nisha. Find the present ages of both Asha and Nisha.

8. Find the values of k for the quadratic equation $2x^2 + kx + 3 = 0$, so that it has two equal roots.

9. What is the nature of roots of $2x^2 – \sqrt{5}x + 1 = 0$?

10. A natural number, when increased by 12, equals 160 times its reciprocal. Find the number.