

**Practice Assignment 2A**

1. Find the roots of the quadratic equation  $5x^2 - 2\sqrt{10}x + 2$ .
2. A factory produces a certain number of toys in a day. It was observed on a particular day that the cost of production of each toy (in rupees) was 1 more than twice the number of toys produced on that day. If the total cost of production on that day was Rs.105, find the number of toys produced and the cost of each toy.
3. A motor boat whose speed is 15 km/h in still water takes 1 hour more to go 20 km upstream than to return downstream to the same spot. Find the speed of the stream
4. Find the roots of the following quadratic equations, if they exist, by the method of completing the square:
  - (i)  $x^2 + \sqrt{5}x + 1 = 0$
  - (ii)  $x^2 + x + 4 = 0$
5. Find the roots of the following quadratic equations, if they exist by applying the quadratic formula:
  - (i)  $4x^2 + 4\sqrt{5}x + 5 = 0$
  - (ii)  $x^2 + x + 4 = 0$
6. Find the roots of the following equations:
  - (i)  $x - \frac{1}{x} = 4, x \neq 0$
  - (ii)  $\frac{1}{x+3} - \frac{1}{x-8} = \frac{11}{30}, x \neq -3, 8$
7. A bus travels 200 km at a uniform speed. If the speed had been 10 km/h more, it would have taken 1 hour less for the same journey. Find the speed of the bus.
8. Two pipes running together can fill a tank in  $11\frac{1}{9}$  minutes. If one pipe takes 5 minutes more than the other to fill the tank separately, find the time in which each pipe would fill the tank separately



**Practice Assignment 2A**

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

(i)  $x^2 - 2x + 2 = 0$

(ii)  $x^2 - 2\sqrt{2}x + 2 = 0$

(iii)  $x^2 - 4x + 3 = 0$

10. Find the values of  $k$  for quadratic equation  $x^2 - kx + 4$ , so that they have two equal roots.

11. Is the following situation possible? If so, determine their present ages. The sum of the ages of two friends is 16 years. Four years ago, the product of their ages in years was 70.