SIMULTANEOUS LINEAR EQUATIONS

1. The present ages of Rahul and Krishna are in the ratio 3 : 4. Five years later, the ratio will be 4 : 5. Find their present ages. [15, 20]
2. In a two-digit number, the sum of the digits is 6. The difference of the number obtained by reversing the digits and the number itself is 18. Find the number. [42]
3. The length of a rectangle is thrice its width. If its perimeter is 32 units, find its dimensions. [12, 4]
4. If 2 is added to the numerator and denominator it becomes $\frac{7}{9}$ and if 1 is subtracted from the numerator and denominator it becomes $\frac{2}{3}$. Find the fraction. [5/7]
5. The difference of two numbers is 5, and the sum of square of both numbers is 97. Find the two numbers. [4, 9]
6. The ratio of two numbers is $\frac{3}{4}$. If 4 is added in first and 32 is subtracted from the second, the ratio becomes the reciprocal of the original ratio. Find the numbers. [16, 40]
7. The age of the Mukesh is nine times the age of the his daughter. Five years later, the age of the Mukesh will be five times the age of his daughter. Find their present ages. [5, 45]
8. In a triangle, the sum of two angles is equal to the twice the third angle. If the difference between these two angles is 40°, determine all the angles. [80^0, 40^0, 60^0]
9. Sumit bought 11 erasers and 6 pencils for Rs 92, and 3 erasers and 5 pencils for Rs 52. Find the cost price for each eraser and pencil. [4, 8]
10. Solve the following simultaneous equations :

    (a) $7m - 9n = 15$; $9m - 7n = 33$

    (b) $a + 2b = 23$; $2a + 5b = 36$

    (c) $\frac{1}{2(x+y)} + \frac{3}{4(x-y)} = 5$ $\frac{1}{3(x+y)} + \frac{1}{6(x-y)} = 2$

    (d) $2x + 3y = 7$ $4x - 2y = 1$ (By cross-multiplication)