Class 7-Mathematics

Instructions for students: The notes provided must be copied to the Maths copy and then do the homework in the same copy.

Chapter 9

Linear Equations

Linear Equation: An equation containing only one variable with highest degree 1.

e. g : 3x – 6 = 7 ,x – 4 = 3x +10

Root or Solution: A number that satisfies the given equation is called its root or solution.

Note: To multiply a binomial with a constant Multiply each term of the binomial with the constant.

e. g. 3(x – 8) = 3x – 24

-5(y – 6) = -5y + 30

(This is also said to be distributive law. This is how brackets are removed from equations)

Exercise 9.1

2. ii. Solve $2\left(x-\frac{3}{2}\right)=11$

$2\left(x-\frac{3}{2}\right) = 11$

$\Rightarrow 2x-2.\frac{3}{2} = 11$

$\Rightarrow$2x – 3 = 11

$\Rightarrow$2x = 11+3

$\Rightarrow$2x = 14 $\Rightarrow$ x = $\frac{14}{2} = 7$

4.i Solve $3x-\frac{1}{3}=2\left(x-\frac{1}{2}\right)+5$

$3x-\frac{1}{3} = 2\left(x-\frac{1}{2}\right)+5$

$\Rightarrow\frac{9x-1}{3} = 2.x-2.\frac{1}{2}+5$

$\Rightarrow\frac{9x-1}{3} = 2x-1+5$

$\Rightarrow \frac{9x-1}{3} = 2x + 4$

$\Rightarrow 9x - 1 = 3(2x + 4)$

$\Rightarrow 9x - 1 = 6x + 12$

$\Rightarrow 9x - 6x = 12+1$

$\Rightarrow 3x = 13$

$\Rightarrow x = \frac{13}{3} = 4\frac{1}{3}$

9. Solve 2p+20% of (2p -1) = 7

$\Rightarrow$2p+20% of (2p -1) = 7

$\Rightarrow 2p + \frac{20}{100} \times (2p - 1) = 7$

$\Rightarrow 2p + \frac{1}{5} \times (2p - 1) = 7$ (L.C.M of denominators = 5)

$\Rightarrow \frac{2p \times 5 + 1(2p-1)}{5} = 7$

$\Rightarrow \frac{10p+2p-1}{5} = 7$

$\Rightarrow \frac{12p-1}{5} = 7$

$\Rightarrow 12p - 1 = 7 \times 5$

$\Rightarrow 12p - 1 = 35$

$\Rightarrow 12p = 35+1$

$\Rightarrow 12p = 36$

$\Rightarrow p = \frac{36}{12}$

$\Rightarrow p = 3$

Home work: Solve Exercise **9.1 Questions 1(i), 2(i), 3(i), 4(i), 5(ii), 6(i), 7(i), 8(i), 9(i) and 10** in the Maths copy.

Practise all questions from **Exercise 9.1**.