Tender Heart High School, Sec.-33B

Class: VIII **Teacher:** Ms. Deepti

Subject: Mathematics

Topic: Linear equations

Chapter-15.

There are two types of equations

Mathematical / Numerical equation

Algebraic equations.

It is the statement about the equality of two given expressions.

for eg (i) $4 + 5 = 9$

(ii) $2x + 9 = 3$

(iii) $\underbrace{2(x+1)}_{\text{L.H.S}} = \underbrace{5(3x-5)}_{\text{R.H.S}}$

L.H.S (left hand side) R.H.S (Right hand side)

Rules for solving a linear equation

(i) To find the value of the variable (say x), we can add / sub. / multiply / divide the same number on the both sides of equation

OR

(i) Trasposition

Take the constant from L.H.S to R.H.S (Change the sign from +ve to -ve or vice-versa) if the number is multiplied by x, then the number will be divide the other number on the R.H.S.

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linear equation
Exercise - 15 A

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Soln-2 $5y + 18 = 11 - 2y$

$5y + 2y = 11 - 18$

$7y = -7$

$y = \frac{-7}{7} = -1$ $\boxed{y = -1}$

Soln 5 $3(t-5) - 16t = 12 - 2(t-3)$

$3t - 15 - 16t = 12 - 2t + 6$

$-15 - 13t = 18 - 2t$

$-15 - 18 = 13t - 2t$

$-33 = 11t$

$t = \frac{-33}{11}\ 3$ $\boxed{t = -3}$

Soln 9. $\frac{2 - 9z}{17 - 4z} = \frac{4}{5}$

$5(2 - 9z) = 4(17 - 4z)$

$10 - 45z = 68 - 16z$

$10 - 68 = 45z - 16z$

$-58 = 29z$

$z = -\frac{58}{29}\ 2$ $\boxed{z = -2}$

Soln 12 $\frac{0.5z + 4}{1.2z + 6} = \frac{5}{3}$

$3(0.5z + 4) = 5(1.2z + 6)$

$1.5z + 12 = 6z + 30$

$12 - 30 = 6z - 1.5z$

$-18 = 4.5z$

$z = \frac{-18^2 \times 10^2}{45} = -4$ $\boxed{z = -4}$

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Teacher:

Solving $\frac{3}{x-2} - \frac{2}{x-3} = \frac{4}{(x-3)} - \frac{3}{(x-1)}$

$$\frac{3(x-3) - 2(x-2)}{(x-2)(x-3)} = \frac{4(x-1) - 3(x-3)}{(x-3)(x-1)}$$

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

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

$$(x-5)(x-1) = (x+5)(x-2)$$

$$x^2 - x - 5x + 5 = x^2 - 2x + 5x - 10$$

$$-6x + 5 = 3x - 10$$

$$5 + 10 = 3x + 6x$$

$$15 = 9x$$

$$x = \frac{15}{9}\ 5$$

$$\boxed{x = \frac{5}{3}}$$

Exercise - 15B will be done in the next assignment