

Jender Heart High School, Sec.-338

Class: VII

Teacher: Ms. Deepa

Subject: Mathematics

Topic: linear equations
chapter-14

There are two types of equations

Mathematical /
Numerical equation

Algebraic equations.

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

for eg

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

$$(ii) 2x + 9 = 3$$

$$(iii) \underbrace{2(x+1)}_{\downarrow} = \underbrace{5(3x-5)}_{\downarrow}$$

L.H.S

R.H.S

(left hand side)

(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

- (ii) Transposition

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.

Exercise - 14A

Class: VII
Subject: Mathematics
Topic: Chapter-14
Linear equations

classmate

Date: 7.10.24

Page: 2

Teacher: Ms. De epta

Soln 4. $3x - \frac{5}{3} = x - 3$

$$3x - x = \frac{5}{3} - \frac{3}{1}$$

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

$$2x = -\frac{4}{3} \Rightarrow x = -\frac{4}{3} \div 2 = -\frac{4}{3} \times \frac{1}{2}$$

$$\boxed{x = -\frac{2}{3}}$$

Soln-7 $5(3-x) + 1 = 3(x+4)$

$$15 - 5x + 1 = 3x + 12$$

$$16 - 5x = 3x + 12$$

$$16 - 12 = 3x + 5x$$

$$4 = 8x$$

$$x = \frac{4}{8} = \frac{1}{2}$$

$$\boxed{x = \frac{1}{2}}$$

Soln 10 $p - (2p+5) - 5(1-2p) = 2(3+4p) - 3(p-4)$

$$p - 2p - 5 - 5 + 10p = 6 + 8p - 3p + 12$$

$$9p - 10 = 5p + 18$$

$$9p - 5p = 18 + 10$$

$$4p = 28$$

$$p = \frac{28}{4} = 7$$

$$\boxed{p = 7}$$

class VII

Subject Mathematics

classmate

Date 7.10.24

Page 3

Teacher:

Ms. Deepa

Topic: Chapter-14

Soln 11 $\frac{2x+3}{3+x} = \frac{3}{2}$

$$2(2x+3) = 3(3+x)$$

$$4x+6 = 9+3x$$

$$4x-3x = 9-6$$

$$1x = 3$$

$$\boxed{x=3}$$

Soln-15 $\frac{x+5}{2} + \frac{x}{3} = 20$

$$\frac{3(x+5)+2(x)}{6} = 20$$

$$\frac{3x+15+2x}{6} = 20$$

$$5x+15 = 20 \times 6$$

$$5x+15 = 120$$

$$5x = 120 - 15$$

$$5x = 105$$

$$x = \frac{105}{5} = 21$$

$$\boxed{x=21}$$

Soln 22 $\frac{3}{4}(2x-5) - \frac{5}{6}(7-5x) = \frac{7x}{3}$

$$\frac{9(2x-5) - 10(7-5x)}{12} = \frac{7x}{3}$$

$$18x - 45 - 70 + 50x = \frac{7x}{3} \times 4$$

$$68x - 115 = 28x$$

$$68x - 28x = 115$$

$$40x = 115$$

$$x = \frac{115}{40} = 2.875$$

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