

## VIII Homework - 13 (Linear Equations in One Variable)

- 1) Fifteen added to thrice a whole number gives 93. The number is \_\_\_\_\_
- 2) Find three consecutive even numbers whose sum is 156
- 3) Arpita's present age is thrice of Shipa. If Shipa's age three years ago was  $x$ . Then, Arpita's present age is  
(a)  $3(x-3)$  (b)  $3x+3$  (c)  $3x-9$  (d)  $3(x+3)$
- 4) The sum of three consecutive multiples of 7 is 357. Find the smallest multiple  
(a) 112 (b) 126 (c) 119 (d) 116
- 5)  $9x - \underline{\hspace{2cm}} = -21$  has the solution  $(-2)$ .
- 6) A term of an equation can be transposed to the other side by changing its \_\_\_\_\_.
- 7) On subtracting 8 from  $x$ , the result is 2. The value of  $x$  is \_\_\_\_\_
- 8)  $\frac{x}{5} + 30 = 18$  has the solution as \_\_\_\_\_
- 9) When a number is divided by 8, the result is  $-3$ . The number is \_\_\_\_\_
- 10) 9 is subtracted from the product of  $p$  and 4, the result is 11. The value of  $p$  is \_\_\_\_\_
- 11) If  $\frac{2x}{5} - 2 = 5 - \frac{3x}{5}$ , then  $x = \underline{\hspace{2cm}}$
- 12) After 18 years, Swarnim will be 4 times as old as he is now. His present age is \_\_\_\_\_
- 13) Convert the statement, adding 15 to 4 times  $x$  is 39 into an equation.
- 14) The sum of two consecutive multiples of 10 is 210. The smaller multiple is \_\_\_\_\_
- 15) State (True or false) Justify your answer.  
(i) if  $\frac{x}{11} = 15$ , then  $x = \frac{11}{15}$   
(ii) if  $\frac{x}{3} + 1 = \frac{7}{15}$ , then  $\frac{x}{3} = \frac{6}{15}$

## VIII Homework-13 (Linear Equations in one variable - answers)

1) Let the whole number be  $x$ .

$$\text{Then, } 3x + 15 = 93$$

$$3x = 93 - 15 = 78$$

$$\therefore x = \frac{78}{3} = \underline{26}$$

Hence the number is 26

2) Let the three consecutive even numbers be  $x, x+2$  and  $x+4$

$$\text{Then, } x + x + 2 + x + 4 = 156$$

$$3x + 6 = 156$$

$$3x = 156 - 6 = 150$$

$$\therefore x = \frac{150}{3} = 50$$

Hence the required numbers are  $x = 50,$

$$x + 2 = 52$$

$$\text{and } x + 4 = 54$$

3) 3 years ago, Shilpa's age =  $x$  years

Then, present age of Shilpa =  $(x+3)$  years

Thus, Arpita's present age =  $3(x+3)$  (d)

4) Let the three consecutive multiples of 7 be  $x, x+7$  and  $x+14$ .

$$\text{Then, } x + x + 7 + x + 14 = 357$$

$$3x + 21 = 357$$

$$3x = 357 - 21 = 336$$

$$\therefore x = \frac{336}{3} = 112$$

Hence the smallest multiple =  $x = \underline{112}$  (a)

5)  $9x - y = -21$

$$9x(-2) - y = -21$$

$$-18 - y = -21$$

$$-y = -21 + 18 = -3$$

$$\therefore y = 3$$

$$\text{Hence } 9x - \underline{3} = -21$$

6) sign

$$7) x - 8 = 2$$

$$\therefore x = 2 + 8 = \underline{10}$$

$$8) \frac{x + 30}{5} = 18$$

$$\frac{x}{5} = 18 - 30$$

$$\frac{x}{5} = -12$$

$$\therefore x = -12 \times 5 = \underline{-60}$$

9) Let the number be  $x$ .

$$\frac{x}{8} = -3$$

$$\therefore x = -3 \times 8 = \underline{-24}$$

$$10) (p \times 4) - 9 = 11$$

$$\Rightarrow 4p - 9 = 11$$

$$\Rightarrow 4p = 11 + 9 = 20$$

$$\therefore p = \frac{20}{4} = \underline{5}$$

$$11) \frac{2}{5}x - 2 = 5 - \frac{3}{5}x$$

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

$$\Rightarrow \frac{5}{5}x = 7$$

$$\therefore x = \underline{7}$$

12) Let the present age be  $x$  years

After 18 years, Swarnimi's age =  $x + 18$

$$\text{Then, } x + 18 = 4x$$

$$\Rightarrow 18 = 4x - x$$

$$\Rightarrow 3x = 18$$

$$\therefore x = \frac{18}{3} = \underline{6 \text{ years}}$$

$$13) 4x + 15 = 39$$

14) Let the two consecutive multiples of 10 be  $x$  and  $x+10$

$$\text{Then, } x+x+10=210$$

$$2x = 210-10=200$$

$$\therefore x = \frac{200}{2} = 100$$

Thus, the smaller multiple is  $x = \underline{100}$

15) (i)  $\frac{x}{11} = 15$

$$x = 11 \times 15$$

Hence **False**

(ii)  $\frac{x+1}{3} = \frac{7}{15}$

$$\frac{x}{3} = \frac{7}{15} - 1$$

$$= \frac{7-15}{15} = \frac{-8}{15} \text{ . Hence False}$$