CLASS VIII: STUDY MATERIAL

CHAPTER: LINEAR EQUATIONS IN ONE VARIABLE

CONCEPT IN BRIEF

1. An equation is a statement of equality which contains an unknown quantity or variable.

2. Any value of the variable which makes this statement true is called the solution or root of the equation.

3. To solve an equation we can

(i)Add or subtract the same number to both sides of the equation without changing the equality.

(ii) Multiply or divide both sides of the equation by a non -zero number.

(iii)Use “transposition” which means taking any term of the equation to the other side with its sign changed without affecting the equality. A number that divides another number on one side, when transposed multiples on the other and vice-versa.

4. Method for solving a word problem:

(i)Read the problem carefully.

(ii)Identify the known and unknown in symbolic form to give an equation.

(iii)Express the relationship between the known and unknown in the symbolic form to give an equation.

(iv)Solve the equation to find the unknown quantity.

(v)Verify the solution by substituting it in the question.

(vi) Interpreting the solution i.e. translating the solution into verbal language.

 LEVEL I

Q1. WRITE THE STANDARD FORM OF A LINEAR EQUATION IN ONE VARIABLE X.

Q2.WHICH ONE OF THESE IS A LINEAR EQUATION

(a)2X+5=0 OR (b)3X2=12.?

Q3.A NUMBER WHEN SUBTRACTED FROM 40 RESULTS INTO 15.WRITE THIS STATEMENT IN THE FORM OF AN EQUATION.

Q4. A NUMBER WHEN MULTIPLIED BY 5 EXCEEDS ITSELF BY 32.THE NUMBER CAN BE (a)6 OR (b)8.

Q5. SOLVE THE EQUATION X+7=3.

 LEVEL II Q6. SOLVE FOR x, 7x – 9 = 16.

Q7.SOLVE THE EQUATION 1.6=Y/1.5

Q8.SOLVE FOR p, 17 + 6p = 9.

Q9. Three consecutive integers add up to 51. What are these integers?

Q10. The perimeter of a rectangular swimming pool is 154 m. Its length is 2 m more than twice its breadth. What are the length and the breadth of the pool?

 LEVEL III

Q11.Bansi has 3 times as many two-rupee coins as he has five-rupee coins. If he has in all a sum of Rs 77, how many coins of each denomination does he have?

Q12.: The sum of three consecutive multiples of 11 is 363. Find these multiples.

Q13. Sum of two numbers is 95. If one exceeds the other by 15, find the numbers.

Q14. 8x + 4 = 3 (x – 1) + 7, SOLVE FOR x.

Q15. A grandfather is ten times older than his granddaughter. He is also 54 years older than her. Find their present ages.

Q16. Solve .

ANSWER:1.) a x + b=0 2.)2X+5=0 3.)40-X=5. 4.) (b)8 5.)X=-4.

6.) 25/7 7.) Y=2.40 8.) p=-4/3 9.)16, 17,18. 10.) 25 breadth, 52lenght.

11.) Rs 5 …..7coins 12.) 110,121 and 132

 Rs2………21coins

13.) 40 and 55 14.) X=0

15.) present age of daughter=6years

And grandfather=60years.

16.) X= -1.

**Worksheet:**

**Q1. SOLVE X+3/7=17/7 Q2. The ages of Rahul and Haroon are in the ration 5:7. Four years later, the sum of their ages will be 56 years. What are their present ages? Q3.Solve X+7-**

**Q4. When 9 is added to two times a number, we get 67. Find the number.**