DEVESH TEDIA CLASSES

Above muthoot finance bank, awadhpuri, bhopal

WORKSHEET - LINEAR EQUATION IN ONE VARIABLE
Class 08 - Mathematics

Section A

1. Solve: $\frac{x}{2} + \frac{x}{4} + \frac{x}{5} + 10000 = x$ **[1]**

   a) 20000

   b) -1000

   c) 2000

   d) 200000

2. If $x - \frac{1}{x-2} = 2 - \frac{1}{x-2}$, then x is equal to **[1]**

   a) 1

   b) 2

   c) 3

   d) 4

3. Solve: 5x + 9 = 5 + 3x **[1]**

   a) -2

   b) 2

   c) 1

   d) -1

4. Solve: $2y + \frac{5}{3} = \frac{26}{3} - y$ **[1]**

   a) $\frac{7}{3}$

   b) 7

   c) 3

   d) $\frac{5}{3}$

5. Solve: $\frac{3}{7}\left(\frac{8x}{13} - \frac{1}{3}\right) - \left(3x + \frac{2-x}{7}\right) = \left(x + \frac{3}{5}\right) \div \frac{2}{7}$ **[1]**

   a) $\frac{-2301}{5545}$

   b) 13

   c) $\frac{2923}{3744}$

   d) $\frac{-2701}{3545}$

6. The solution for $\frac{2}{x+3} - \frac{4}{x-3} = \frac{-6}{x+3}$ is: **[1]**

   a) 3

   b) -1

   c) -3

   d) 9

7. Solve the equation: 3x = 2x + 18 **[1]**

   a) 18

   b) 12

   c) 9

   d) 6

8. Which one of the following is a solution of $\frac{3x-7}{3} > \frac{4x+2}{5}$? **[1]**

   a) x > $\frac{41}{3}$

   b) x > $\frac{22}{3}$

   c) x < $\frac{22}{3}$

   d) x < $\frac{41}{3}$

9. Solve for x: **[1]**

   6(3x + 2) -5(6x - 1) = 6(x - 3) -5(7x - 6) + 12x

   a) 0

   b) -1

c) 2   d) 1

10. Solve: $\frac{3x-2}{4} - \frac{2x+3}{3} = \frac{2}{3} - x$ **[1]**

     a) 4   b) 2

     c) 3   d) 5

11. If $x = \frac{1}{2}$, then the value of $x + \cfrac{1}{1+\cfrac{1}{1+\frac{1}{x}}}$ is equal to **[1]**

     a) $\frac{4}{3}$ b) $\frac{4}{5}$

     c) $\frac{3}{4}$ d) $\frac{5}{4}$

12. Solve: 15(y - 4) - 2(y - 9) + 5(y + 6) = 0 **[1]**

     a) $\frac{2}{3}$ b) 2

     c) 3   d) $\frac{3}{2}$

13. Solve: 3(t - 3) = 5(2t + 1) **[1]**

     a) 3   b) -2

     c) -3   d) 2

14. Solve: 2x - 1 = 14 - x **[1]**

     a) 20   b) 5

     c) 10   d) 15

15. Solve: 8x + 4 = 3(x - 1) + 7 **[1]**

     a) 2   b) 0

     c) 9   d) 1

16. Solve: $\frac{2x}{3} + 1 = \frac{7x}{15} + 3$ **[1]**

     a) 5   b) 6

     c) 10   d) 3

17. Given that -0.3k + 2.1 = 0.4k, the value of k = **[1]**

     a) 3   b) 21

     c) -1   d) 7

18. If 8x - 3 = 25 + 17x, then x is **[1]**

     a) a rational number   b) a fraction

     c) A whole number   d) an integer

19. Solve the equation: 2x - 3 = x + 2 **[1]**

     a) 3   b) 4

     c) 0   d) 5

20. Solve the following: 3(5x - 7) + 2(9x - 11) = 4(8x - 7) - 111 **[1]**

     a) -96   b) 94

     c) 96   d) 92

21. Solve: $x + 7 - \frac{8x}{3} = \frac{17}{6} - \frac{5x}{2}$ **[1]**

    a) 3   b) 5

    c) -5   d) 4

22. Solve for y : $\frac{1}{2}$(3y + 1) - $\frac{1}{3}$ (5y + 2) = y - 1 **[1]**

    a) 75   b) $\frac{5}{7}$

    c) $\frac{7}{5}$ d) $\frac{-5}{7}$

23. Solve: $\frac{x}{2} - \frac{1}{5} = \frac{x}{3} + \frac{1}{4}$ **[1]**

    a) $\frac{27}{10}$ b) 9

    c) 27   d) 10

24. The value of x for which the expressions 3x - 4 and 2x + 1 become equal is **[1]**

    a) 1   b) -3

    c) 0   d) 5

25. Solve the following: (x + 1) + $\frac{1}{3}$ (x - 1) = $\frac{5}{12}$(x - 2) **[1]**

    a) $\frac{-12}{5}$ b) $\frac{5}{12}$

    c) $\frac{-5}{12}$ d) $\frac{12}{5}$

26. If $\frac{x}{pq} + \frac{x}{qr} + \frac{x}{pr}$ = p + q + r, then x = **[1]**

    a) $\frac{pq}{r}$ b) $\frac{q}{pr}$

    c) pqr   d) $\frac{p}{qr}$

27. Find two parts of 34 such that $\left(\frac{4}{7}\right)^{th}$ of one part is equal to $\left(\frac{2}{5}\right)^{th}$ of the other. **[1]**

    a) 15, 19   b) 14, 20

    c) 16, 18   d) 16, 19

28. Solve: $a - \frac{a-1}{2} = 1 - \frac{a-2}{3}$ **[1]**

    a) $\frac{7}{5}$ b) 3

    c) 5   d) 7

29. Solve the following equation: 4z + 3 = 6 + 2z **[1]**

    a) $\frac{3}{2}$ b) 2

    c) 5   d) $\frac{2}{5}$

30. Solve for x: **[1]**
$\frac{x+3}{2} + 3x$ = 5(x - 3) + $\frac{x+23}{5}$

    a) 7   b) 5

    c) 18   d) 13

31. **Assertion (A):** The solution of ax + b is $\frac{-b}{a}$. **[1]**

    Reason (R): The method of shifting the terms.one.by.one of the equation to other side is called transposition.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

32. **Assertion (A):** Perimeter of a rectangle is $\frac{16}{3}$ metre. Its length is $\frac{5}{2}$ metre and breadth is $\frac{1}{6}$ metre. **[1]**

Reason (R): Perimeter is the total space enclosed by the rectangle.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

33. **Assertion (A):** One-fourth of a number when added to one-fifth of itself is 18. The number is 50. **[1]**

Reason (R): On placing value of variable left side of the equation of the equation is equals to right side.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

34. **Assertion (A):** A number consists of two digits whose sum is 8. If 18 is added to the number it's digits are reversed. The number is 26. **[1]**

Reason (R): This problem can also solved by trail and error method.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

35. **Assertion (A):** After 12 years Anil shall be 3 times as old as he was 4 years ago. The present age of Anil is 12 years. **[1]**

Reason(R): An equation involving linear polynomials is called a linear equation.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

36. Solve: $\frac{x+1}{4} = \frac{x-2}{3}$ **[1]**

37. Draw a rough diagram of a weighing balance to show the equation 2x + 5 = 11. **[1]**

38. Solve the equation and check your result: 3x = 2x + 18 **[1]**

39. Solve: 8x - 7 - 3x = 6x - 2x - 3 **[1]**

40. Find the length of sides (as algebraic expressions) of a triangle and a square which have the same perimeter **[1]**

Section B

41. Solve: $x + 7 - \frac{8x}{3} = \frac{17}{6} - \frac{5x}{2}$ **[2]**

42. Solve: $\frac{2x-1}{5} = \frac{3x+1}{3}$ **[2]**

43. Solve the equation and check your result: 5x + 9 = 5 + 3x **[2]**

44. Solve: 4t - 3 - (3t + 1) = 5t - 4 **[2]**

45. Solve the equation and check your result: 3m = 5m - $\frac{8}{5}$ **[2]**

46. Solve: $\frac{x}{2} + \frac{x}{4} + \frac{x}{5}$ + 10000 = x [2]

47. Solve: 3(5x - 7) + 2(9x - 11) = 4(8x - 7) - 111 [2]

48. Solve the equation and check your result: 5t – 3 = 3t – 5 [2]

49. Solve the linear equation: $m - \frac{m-1}{2} = 1 - \frac{m-2}{3}$ [2]

50. Solve the equation and check your result: 4z + 3 = 6 + 2z [2]

Section C

51. Solve: $\frac{1}{2}(x+1) + \frac{1}{3}(x-1) = \frac{5}{12}(x-2)$ [3]

52. Solve: 5x - 2 (2x - 7) = 2(3x - 1) + $\frac{7}{2}$ [3]

53. Solve the equations and check your result: x = $\frac{4}{5}(x+10)$ [3]

54. Solve the equation and check your result: 8x + 4 = 3(x – 1) + 7 [3]

55. Vikram took goats to the field. Half of the goats were grazing. Three-fourths of the remaining goats were playing nearby. The remaining 15 were drinking water from the pond. How many goats were there in total? [3]

56. The ages of Kushagra and Kush are in the ratio 5:6. Five years later the sum of their ages will be 43 years. What is the age difference between the present ages of Kushagra and Kush? [3]

57. Solve: $3x - \frac{x-2}{3} = 4 - \frac{x-1}{4}$ [3]

58. ₹x is to be divided among three friends A, B, and C. The share of A is two-fifths of the total amount, the share of B is two-thirds of the remaining amount and C's share is ₹600. What is the value of x? [3]

59. Solve: 4(3p + 2) - 5 (6p - 1) = 2 (p - 8) - 6 (7p - 4) [3]

60. Solve the linear equation $\frac{x-5}{3} = \frac{x-3}{5}$. [3]

Section D

Question No. 61 to 65 are based on the given text. Read the text carefully and answer the questions: [5]

Sanju and Ankit were playing a game. Sanju was having some small balls in a box .Ankit added same number of balls in the box. Third friend Dinesh added 11 more balls in the box. Ankit counted all the balls.

Total balls were found to be 23. After counting was over each friend wants back their number of balls.

61. If initially x balls were in the box then which equation is formed?

    a) 2x + 11 = 23   b) x + 11 = 23

    c) 2x - 11 = 23   d) x - 11 = 23

62. How many balls were initially in the box?

    a) 6   b) 4

    c) 5   d) 7

63. How many balls were added by Ankit?

a) 4

b) 7

c) 5

d) 6

64. Sum of the ball of Sanju and Akit = x + x = 2x = _____.

65. The equation can be simplified to 2x = 12.

a) True

b) False

Question No. 66 to 70 are based on the given text. Read the text carefully and answer the questions: **[5]**

Ahay and Arun were playing number game. Ajay thought a number ,he doubled it and added 4. Arun also taken same number and added 9 to this number. The result of Ajay and Arun was same. Suppose the number thought by Ajay was x then Double + 4 = 2x + 4,

Arun just added 9 to number

so his result = x + 9,

Both get same number

Thus : 2x + 4 = x + 9

We get variable on both sides

66. What will be the equation when we take variables in LHS?

a) x = 9 - 4

b) 2x - x = 9 - 4

c) 2x + x = 9 - 4

d) 2x - x = 9 + 4

67. What was the number thought by Ajay?

a) 9

b) 4

c) 6

d) 5

68. What was the common result which Ajay and Arun both got?

a) 15

b) 14

c) 24

d) 20

69. The equation formed is a linear equation in _____ variable.

70. Ajay and Arun actually taken different numbers initially.

a) True

b) False

71. Solve: **[5]**

$$m - \frac{m-1}{2} = 1 - \frac{m-2}{3}$$

72. The ratio of the speed of a boat to the stream is 7:2. The boat takes 6 hours more travelling **[5]** upstream than downstream. What is the time taken by the boat for the entire journey?