Worksheet

1. Choose the correct option.
   a. Which of the following is not a linear equation?
      i. $2x + 5 = -6x$ ii. $\frac{5y}{3} + 2x = 7$ iii. $xy + 9 = x$ iv. $\frac{k-7}{14} = \frac{8-k}{10}$
   b. If $\frac{3x-1}{6x+3} = \frac{1}{3}$, value of x is
      i. –2 ii. 0 iii. 2 iv. 1
   c. The solution of $9x + 18 = 36$ is
      i. 2 ii. –2 iii. 9 iv. 6
2. Solve the following equations:
   a. $\frac{5}{6}(4x - 12) - \left(7x - \frac{2}{3}\right) = x + 28$ b. $\frac{4x}{5} + 2x = 14$
   c. $\frac{13y - 2}{15y + 4} = \frac{7}{5}$ d. $(5p + 10) - 15(p - 7) = (2p - 3)5 - 10$
3. Show the following inequalities on a number line.
   a. $x > -5$ and $x < 1$ b. $-5 < x \leq 2$ c. $x > 1$ and $x < 7$
4. Solve the following inequations and graph the solution set.
   a. $4 - 3x \geq x - 16$, $x \in$ N b. $3(2x - 4) > 12$, $x \in$ W
5. Solve: $-16 - 18x \geq 12x + 14$ and show the solution set on the number line.
6. The perimeter of a rectangle is 40 m. Its length is 4 m more than its breadth. Find the length and breadth of the rectangle.
7. Two equal sides of an isosceles triangle measures $5x - 3$ units and $x + 13$ units, respectively. If the third side measures $4x + 3$ units, find its perimeter and the measure of each side.
8. Two years ago, Shourya was 6 years older than Priyanka. Now, he is thrice as old as she is. Find their present ages.
9. In a wallet, ₹760 is there as notes in denomination of 10, 20 and 50. If the number of ₹10 notes is two more than that of ₹50 notes and ₹20 notes is one more than that of ₹50 notes, find the number of notes of each denomination.
10. Find four consecutive numbers whose sum is 246.
11. The length of a field is 6 m more than its width. If its perimeter is 84 m, what is its area?
12. Solve and verify: $\frac{5x}{6} + \frac{3x}{9} = x - 2$
13. Rita has given one-fourth of her toffees to her friend Geeta, one-fifth to her friend Sita and the remaining toffees to her brother. If her brother has 22 toffees, find the total number of toffees she initially had.
14. If the replacement set is {–5, –4, –3, –2, –1, 0, 1, 2, 3}, then find the solution set of $4x + 3 \leq 7x - 4$ where $x \in \mathbf{Z}$ and also represent the solution set on the number line.
15. Ajay scored 12 marks more than Shashi and Deepak scored 5 marks less than Ajay. If their total score is 199, how much is the score of Deepak?

Answers to Worksheet

1. a. iii b. iii c. i
2. a. $x = -8$ b. $x = 5$ c. $x = \frac{-19}{20}$ d. $p = 7$
4. a. $x \leq 5$ b. $x > 4$ 5. $x \leq -1$
6. Length = 12 m, breadth = 8 m 7. 53 units, (17, 17, 19) units
8. Age of Shourya = 9 years; Age of Priyanka = 3 years
9. Number of 10-rupee notes = 11
   Number of 20-rupee notes = 10
   Number of 50-rupee notes = 9
10. Numbers are 60, 61, 62, 63.
11. length → 24 m, width → 18 m, area = 432 m^2
12. $x = -12$ 13. 40 toffees 14. $x \geq \frac{7}{3}$ 15. 67