LINEAR EQUATIONS IN ONE VARIABLE

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Q1. Write an equation for the following:

a. 5 times a number is 155

b. 2 times the sum of a number and 7 is 13

c. Three times a number is twice the sum of the number and 10

Q2. From the following equations tick the equations which have the solution – 1:

a. $2 - (-x) = 1$

b. $13 + 2x = 15$

c. $11 + 3x = 8$

Q3. Verify that 6 is a solution for the following equation:

$x + 4 = 2(x - 1)$

Q4. Represent the following statements as equations. Find which of the two equations have the same solution.

Statement	Equation	Solution
a. Sum of twice the number and 10 is 40		
b. One third of a number is –5		
c. 5 times the sum of a number and 2 is 85		

_____ and _____ have the same solution.

Q5. The length of a rectangle is twice its breadth. If the perimeter of the rectangle is 72m, find the length and breadth of the rectangle.

Answer: _____

Q6. A cupboard full of books is divided among two children in the ratio 3:5. If one child gets 10 books more than the other child, find the total number of books in the cupboard initially.

Answer: _____

1

Q7. The sum of 3 consecutive even numbers is 42. Find the three numbers.

Answer: _____

Q8. Twice the number decreased by 33 is 31. Find the number.

Answer: _____

Q9. Rashmi is 10 years older than her sister. If the sum of their ages is 52 years, find Rashmi's age.

Answer: _____

Q10. One-third of a fraction is twice of $\frac{1}{15}$. Find the fraction. Shade the appropriate number of squares in the figure given below to represent the fraction.

Answer: Fraction: _____

ANSWERS

1. a. $5x = 155$

   b. $2(x + 7) = 13$

   c. $3x = 2(x + 10)$

2. (a) and (c)

3. LHS = $x + 4 = 6 + 4 = 10$; RHS = $2(x - 1) = 2(6 - 1) = 2 \times 5 = 10$; LHS = RHS

4.

Statement	Equation	Solution
a. Sum of twice the number and 10 is 40	$2x + 10 = 40$	$x = 15$
b. One third of a number is −5	$\frac{1}{3}$ of $x = -5$	$x = -15$
c. 5 times the sum of a number and 2 is 85	$5(x + 2) = 85$	$x = 15$

   (a) and (c) have the same solution: 15

5. Length = 24 m, breadth = 12 m

6. 40 books

7. 12, 14, 16

8. 32

9. 31 years

10. Fraction: $\frac{2}{5}$