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Linear Equations and Inequations

Q1. Check which value in the brackets is a solution of the following equations. Tick the correct answer and fill in the blank:

	Equation	Choice	Solution
a.	$2x + 5 = -11$	$(-8/-7)$	_____
b.	$5z - 15 = 20$	$(1/7)$	_____

Q2. Solve the following equations and verify your answer:

a. $4(3y + 2) - 5(6y - 1) = 2(y - 8) - 6(7y - 4) + 4y$

b. $\frac{4y - 3}{4} - 3 = \frac{5y - 7}{3} - 4y - 1$

Q3. The length of a rectangle is twice its breadth. If the perimeter of the rectangle is 48 m, find the length and breadth of the rectangle.

Answer:

Length of the rectangle = _____

Breadth of the rectangle = _____

Q4. The sum of two consecutive multiples of 5 is 75. Find the two multiples and fill in the blanks.

Answer: (5 × _____) + (5 × _____) = _____

Q5. State True or False:

a. The replacement set of every equation is a subset of the solution set. _____

b. The equation remains unchanged if any positive integer is multiplied to both sides of the equation. _____

c. A number line is used to represent the solution set of an equation graphically. _____

d. The solution of every linear equation cannot be represented graphically. _____

Q6. Choose the correct option and fill in the blanks:

a. If $\frac{2x}{3} > \frac{-1}{3}$ is multiplied by 3 the resulting equation will become _____. ($2x > -3 / 2x > -1$)

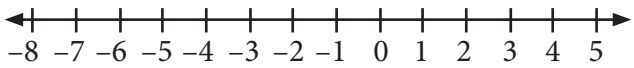
b. The solution set for $(-3 \leq x \leq 4)$, $x \in Z$ is { _____ }.
({–3, –2, –1, 0, 1, 2, 3, 4} / {–2, –1, 0, 1, 2, 3})

c. The set of the elements of the replacement set which satisfies the inequation is called the _____ set.
(replacement/solution)

d. A statement of equality involving one variable whose power is _____ is called a linear equation in one variable.
(one/two)

Q7. Solve the inequation and represent the solution set on the following number line, if the replacement set is {–8, –7, –6, –5, –4, –3, –2}:

$7x + 4 > 3x - 20$



Q8. Tick the correct option:

If the denominator d of a fraction is greater than the numerator n by 8, then:

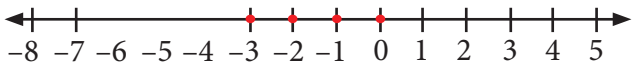
a. $d + 8 = n$

b. $n - 8 = d$

c. $n + 8 = d$

d. $8 - n = d$

Q9. Write the inequality represented by the given number line:



Answer: _____

Q10. The replacement set for the following inequation is {0, 1, 2, 3, 4, 5, ...}. Tick the correct solution set for the following inequation:

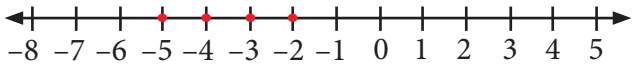
$3x + 4 \geq 19$

a. {4, 6, 8, 10, …}

b. {4, 5, 6, 7, 8, 9, …}

c. {5, 6, 7, 8, 9, …}

Answers

1. a. –8; b. 7
2. a. $-\frac{5}{18}$; b. $\frac{1}{8}$
3. Length = 16m, Breadth = 8m
4. (5 × 7) + (5 × 8) = 75
5. a. False; b. True; c. True; d. False
6. a. $2x > -1$; b. {–3, –2, –1, 0, 1, 2, 3, 4}, solution, one
7. 

8. (c)
9. $-3 \leq x \leq 0$
10. (c)