

Linear Equations and Inequations

Q1. Ram is 5 years younger than Kavita. If Kavita's age is p years, what is Ram's age?

Answer: _____

Q2. Solve the following equations and verify your answer:

a. $\frac{3x - 2}{3} + \frac{3x + 3}{3} = x + \frac{7}{6}$

b. $2y - 3(y + 1) = 5y - 7$

Q3. Anju is 5 years younger than Reshma. Four years later, Reshma will be twice as old as Anju. Find their present ages.

Answer:

Anju's age = _____

Reshma's age = _____

Q4. Rashi opened her piggy bank in which she had collected many 20 paise and 50 paise coins. She counted them and found that the number of 20 paise coins is four times that of 50 paise coins. If the total money in the piggy bank is ₹39, find the number of coins of each denomination.

Answer:

Number of 50 paise coins = _____

Number of 20 paise coins = _____

Q5. State True or False:

a. The inequation $(2x > 7)$ has the same solution set as $(x > \frac{7}{2})$.

b. A 10×10 square matrix is used to represent the solution set of an equation graphically.

c. The inequation remains unchanged if the same number is added to both sides of the inequation.

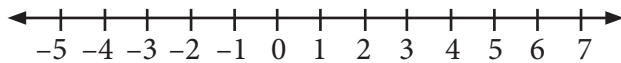
d. A set of all those values of variables which satisfy the given inequation is called its solution set.

Q6. Write the resulting inequation in each of the following cases when each side of the inequation is multiplied by -3 :

Inequation	Resulting Inequation
a. $-\frac{x}{5} > -\frac{1}{3}$	_____
b. $x < -9$	_____

Q7. Solve the inequation and represent the solution set on the following number line:

$$5x - 10 < 2x + 5 \text{ where } x \in \mathbf{N}$$

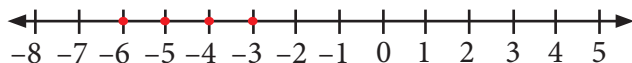


Q8. Tick the correct option:

If $\angle ABC = 25^\circ$, and reflex $\angle ABC = x^\circ$, then:

- a. $x + 25 = 180$
- b. $x + 25 = 360$
- c. $x - 25 = 360$

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




Answer: _____

Q10. Tick the correct answer:

If the solution set of an inequation is $\{0, 2, 4, 6\}$ then its replacement set **cannot** be:

- a. $\{-4, -2, 0, 2, 4, 6, 8, 10, \dots\}$
- b. $\{\dots, -4, -3, -2, -1, 2, 3, 4, 5, 6, 7, 8, 9, 10, \dots\}$
- c. $\{\dots, -2, -1, 0, 2, 4, 6, 8, 10, 12, \dots\}$

Answers

- $(p - 5)$ years
- a. $\frac{5}{4}$; b. $\frac{2}{3}$
- 1 year; 6 years
- 50 p coins = 30; 20 p coins = 120
- a. True; b. False; c. True; d. True
- a. $\frac{3x}{7} > 1$; b. $-3x < 27$
- 

A number line is shown with tick marks from -5 to 7. Four red dots are placed at the integer values 1, 2, 3, and 4.
- (b)
- $-6 \leq x \leq -3$
- (b)