

Linear Inequations in one unknown

Assignment

1. Find the solution set of each of the following inequation: $\frac{1}{2}(x - 3) \geq \frac{2}{3}(6 - 2x), x \in R$.
2. Solve the following inequation and graph the solution set on the number line: $2x - 3 < x + 2 \leq 3x + 5, x \in R$.
3. Solve the following inequation and write the solution set: $13x - 5 < 15x + 4 < 7x + 12, x \in R$.
Represent the solution on a real number line.
4. Find the value of x , which satisfy the inequation $-2\frac{5}{5} < \frac{1}{2} - \frac{2x}{3} \leq 2, x \in W$. Graph the solution set on the number line.
5. Solve the following inequation and represent the solution set on the number line: $2x - 5 \leq 5x + 4 < 11$, where $x \in I$.
6. Solve the inequation $25 - 4(2x - 1) < 25, x \in N$.
7. Solve the inequation $-x \geq \frac{x-11}{3}, x \in R$. Express the solution set in set notation form.
8. A is the solution set of $-3x + 4 < 2x - 3$ and B is the solution set of $4x - 5 < 12$, where $x \in W$. Find the sets:
(i) $A \cap B$ (ii) $A - B$.
9. Solve $\frac{x-2}{2x+4} < \frac{1}{3}, x \in R$.
10. If $x \in W$, solve the inequations $4 + 3x \leq \frac{7x}{3} + 6\frac{1}{2}$ and $4x \leq 4 + 6x$.
11. Find the range of values of x , which satisfy the inequality $-\frac{1}{5} \leq \frac{3x}{10} + 1 < \frac{2}{5}; x \in R$. Graph the solution set on the number line.
12. Solve the inequation $12 + 1\frac{5}{6}x \leq 5 + 3x; x \in R$ and represent the solution on a number line.
13. Solve the following inequation and graph the solution set on two different number line
 $2x - \frac{5}{2} < x + \frac{3}{2} \leq 3x + \frac{11}{2}$ when (i) $x \in R$ (ii) $x \in I$.
14. Find the range of values of x , which satisfy $-\frac{1}{3} \leq \frac{x}{2} - 1\frac{1}{3} < \frac{1}{6}; x \in R$. Graph these values of x on the real number line.
15. Solve $2x - 3 \geq x + \frac{1-x}{3} > \frac{2}{3}x$, if $x \in R$ and graph on number line.

Answers

1. $\{x: x \geq 3, x \in R\}$ 2. $\{x: -1.5 \leq x < 5, x \in R\}$ 3. $x < 1$ 4. $\{0,1,2,3,4\}$
5. $\{-3, -2, -1, 0, 1\}$ 6. $\{1,2,3, \dots\}$ 7. $\{x: x \leq \frac{11}{4}; x \in R\}$ 8. (i) $A \cap B = \{2,3,4\}$ (ii) $A - B = \{5,6, \dots\}$
9. $\{x < 10, x \in R\}$ 10. $\{0,1,2,3\}$ 11.

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