

1. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-6 + 6x < \frac{46x - 6}{6} \leq 7 + 7x$$

- A. $(a, b]$, where $a \in [-4, 2]$ and $b \in [6, 14]$
B. $(-\infty, a] \cup (b, \infty)$, where $a \in [-7, 0]$ and $b \in [8, 14]$
C. $[a, b)$, where $a \in [-3, -1]$ and $b \in [11, 14]$
D. $(-\infty, a) \cup [b, \infty)$, where $a \in [-3, 0]$ and $b \in [12, 15]$
E. None of the above.
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2. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-8 + 7x > 8x \text{ or } -9 - 3x < 4x$$

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-8, -5]$ and $b \in [-4.29, 2.71]$
B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.71, 2.29]$ and $b \in [7, 12]$
C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-0.71, 3.29]$ and $b \in [6, 11]$
D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-12, -6]$ and $b \in [-3.29, 0.71]$
E. $(-\infty, \infty)$
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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$8 - 9x \leq \frac{-43x - 5}{9} < 7 - 5x$$

- A. $(-\infty, a) \cup [b, \infty)$, where $a \in [1.03, 3.03]$ and $b \in [34, 38]$
B. $[a, b)$, where $a \in [0.03, 9.03]$ and $b \in [34, 37]$
C. $(a, b]$, where $a \in [-1.97, 4.03]$ and $b \in [33, 36]$
D. $(-\infty, a] \cup (b, \infty)$, where $a \in [-0.97, 6.03]$ and $b \in [30, 36]$

E. None of the above.

4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-6 + 3x > 4x \text{ or } -7 + 5x < 8x$$

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-6, -3]$ and $b \in [-4.33, 4.67]$
- B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-7, -3]$ and $b \in [-4.33, -0.33]$
- C. $(-\infty, a] \cup [b, \infty)$, where $a \in [1.33, 6.33]$ and $b \in [2, 10]$
- D. $(-\infty, a) \cup (b, \infty)$, where $a \in [0.33, 3.33]$ and $b \in [5, 9]$
- E. $(-\infty, \infty)$

5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{9}{8} - \frac{6}{5}x \leq \frac{5}{4}x - \frac{10}{7}$$

- A. $(-\infty, a]$, where $a \in [-1.9, -0.2]$
- B. $[a, \infty)$, where $a \in [-0.96, 2.04]$
- C. $[a, \infty)$, where $a \in [-4.04, -0.04]$
- D. $(-\infty, a]$, where $a \in [0.2, 2.2]$
- E. None of the above.

6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-6x - 4 \geq -4x + 6$$

- A. $[a, \infty)$, where $a \in [-6, -4]$
- B. $[a, \infty)$, where $a \in [-1, 15]$

- C. $(-\infty, a]$, where $a \in [2, 7]$
- D. $(-\infty, a]$, where $a \in [-5, -4]$
- E. None of the above.

7. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

More than 5 units from the number 6.

- A. $(-\infty, -1) \cup (11, \infty)$
- B. $(-1, 11)$
- C. $(-\infty, -1] \cup [11, \infty)$
- D. $[-1, 11]$
- E. None of the above

8. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

More than 5 units from the number -5 .

- A. $(-\infty, -10] \cup [0, \infty)$
- B. $(-10, 0)$
- C. $(-\infty, -10) \cup (0, \infty)$
- D. $[-10, 0]$
- E. None of the above

9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{5}{5} + \frac{3}{8}x > \frac{4}{9}x - \frac{7}{6}$$

- A. (a, ∞) , where $a \in [-31.2, -30.2]$
 - B. $(-\infty, a)$, where $a \in [-31.2, -27.2]$
 - C. $(-\infty, a)$, where $a \in [29.2, 33.2]$
 - D. (a, ∞) , where $a \in [30.2, 35.2]$
 - E. None of the above.
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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$3x + 7 \leq 4x - 3$$

- A. $(-\infty, a]$, where $a \in [4, 13]$
 - B. $(-\infty, a]$, where $a \in [-13, -9]$
 - C. $[a, \infty)$, where $a \in [-11, -8]$
 - D. $[a, \infty)$, where $a \in [9, 12]$
 - E. None of the above.
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