

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

$$-9 - 6x \leq \frac{-32x - 4}{6} < -9 - 7x$$

- A. $(-\infty, a) \cup [b, \infty)$, where $a \in [12.5, 13.5]$ and $b \in [1, 7]$
B. $[a, b)$, where $a \in [7.5, 16.5]$ and $b \in [2, 7]$
C. $(-\infty, a] \cup (b, \infty)$, where $a \in [9.5, 14.5]$ and $b \in [3, 6]$
D. $(a, b]$, where $a \in [12.5, 14.5]$ and $b \in [4, 6]$
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.

$$-5 + 7x > 9x \text{ or } 7 + 6x < 7x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-11, -4]$ and $b \in [-1.5, 5.5]$
B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-2.5, -0.5]$ and $b \in [5, 9]$
C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-4.5, -1.5]$ and $b \in [4, 13]$
D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7, -4]$ and $b \in [1.5, 5.5]$
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.

$$-7 + 3x < \frac{47x + 9}{9} \leq 5 + 5x$$

- A. $(-\infty, a) \cup [b, \infty)$, where $a \in [3.6, 4.6]$ and $b \in [-22, -12]$
B. $(a, b]$, where $a \in [2.6, 4.6]$ and $b \in [-23, -17]$
C. $(-\infty, a] \cup (b, \infty)$, where $a \in [1.6, 6.6]$ and $b \in [-21, -16]$
D. $[a, b)$, where $a \in [0.6, 6.6]$ and $b \in [-18, -17]$

E. None of the above.

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

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

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-1.33, 4.67]$ and $b \in [2, 10]$
- B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-9, 1]$ and $b \in [-6.67, 0.33]$
- C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4, -2]$ and $b \in [-2.67, 3.33]$
- D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-2.33, 3.67]$ and $b \in [0, 8]$
- E. $(-\infty, \infty)$

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

$$\frac{8}{5} + \frac{6}{6}x \geq \frac{9}{4}x - \frac{3}{2}$$

- A. $[a, \infty)$, where $a \in [-3.48, -1.48]$
- B. $(-\infty, a]$, where $a \in [-4.48, 0.52]$
- C. $[a, \infty)$, where $a \in [1.48, 4.48]$
- D. $(-\infty, a]$, where $a \in [1.48, 3.48]$
- E. None of the above.

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

$$-3x + 10 < 3x + 7$$

- A. (a, ∞) , where $a \in [0.21, 1.68]$
- B. $(-\infty, a)$, where $a \in [-1.67, -0.31]$

- C. $(-\infty, a)$, where $a \in [-0.09, 1.89]$
 - D. (a, ∞) , where $a \in [-2.13, 0.21]$
 - E. None of the above.
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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 -9 .

- A. $[-14, -4]$
 - B. $(-\infty, -14) \cup (-4, \infty)$
 - C. $(-\infty, -14] \cup [-4, \infty)$
 - D. $(-14, -4)$
 - E. None of the above
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8. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

No more than 8 units from the number -8 .

- A. $(-\infty, -16] \cup [0, \infty)$
 - B. $(-16, 0)$
 - C. $(-\infty, -16) \cup (0, \infty)$
 - D. $[-16, 0]$
 - E. None of the above
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9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-10}{9} - \frac{10}{8}x \geq \frac{-7}{3}x + \frac{5}{5}$$

- A. $(-\infty, a]$, where $a \in [-5.95, -0.95]$
- B. $[a, \infty)$, where $a \in [-1.05, 2.95]$
- C. $(-\infty, a]$, where $a \in [-0.05, 2.95]$
- D. $[a, \infty)$, where $a \in [-4.95, 1.05]$
- E. None of the above.

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

$$-6x - 10 < -4x - 3$$

- A. (a, ∞) , where $a \in [2.5, 5.5]$
 - B. $(-\infty, a)$, where $a \in [3.5, 8.5]$
 - C. (a, ∞) , where $a \in [-5.5, -0.5]$
 - D. $(-\infty, a)$, where $a \in [-5.5, -1.5]$
 - E. None of the above.
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