

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

$$-10x + 3 \leq -4x - 9$$

- A. $[a, \infty)$, where $a \in [0, 7]$
 - B. $(-\infty, a]$, where $a \in [-7.8, 1.4]$
 - C. $(-\infty, a]$, where $a \in [1.2, 5.3]$
 - D. $[a, \infty)$, where $a \in [-5, -1]$
 - 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.

$$-9x + 4 < 5x - 8$$

- A. (a, ∞) , where $a \in [-2.01, -0.06]$
 - B. $(-\infty, a)$, where $a \in [0, 0.9]$
 - C. (a, ∞) , where $a \in [0.27, 1.63]$
 - D. $(-\infty, a)$, where $a \in [-4.5, -0.5]$
 - E. None of the above.
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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

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

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.33, 4.67]$ and $b \in [6, 7]$
- B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-6, -1]$ and $b \in [-1.67, -0.67]$
- C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-9, -3]$ and $b \in [-8.67, 4.33]$
- D. $(-\infty, a] \cup [b, \infty)$, where $a \in [0.67, 3.67]$ and $b \in [3, 9]$
- E. $(-\infty, \infty)$

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

$$7 - 3x < \frac{-9x + 4}{4} \leq 8 - 3x$$

- A. $(a, b]$, where $a \in [7, 14]$ and $b \in [6.33, 11.33]$
B. $(-\infty, a) \cup [b, \infty)$, where $a \in [8, 13]$ and $b \in [7.33, 13.33]$
C. $[a, b)$, where $a \in [4, 13]$ and $b \in [5.33, 10.33]$
D. $(-\infty, a] \cup (b, \infty)$, where $a \in [-1, 12]$ and $b \in [2.33, 12.33]$
E. None of the above.
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5. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

Less than 7 units from the number -2 .

- A. $(-\infty, -9] \cup [5, \infty)$
B. $[-9, 5]$
C. $(-9, 5)$
D. $(-\infty, -9) \cup (5, \infty)$
E. None of the above
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6. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

Less than 6 units from the number -1 .

- A. $(-7, 5)$
B. $(-\infty, -7] \cup [5, \infty)$
C. $(-\infty, -7) \cup (5, \infty)$

- D. $[-7, 5]$
E. None of the above
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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 + 4x > 6x \text{ or } -7 + 6x < 9x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [0.33, 7.33]$ and $b \in [2.5, 6.5]$
B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.5, 1.5]$ and $b \in [-6.33, -1.33]$
C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.67, 8.33]$ and $b \in [2.5, 6.5]$
D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.5, 1.5]$ and $b \in [-3.33, 0.67]$
E. $(-\infty, \infty)$
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8. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

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

- A. $[a, \infty)$, where $a \in [-3.02, 0.98]$
B. $(-\infty, a]$, where $a \in [-3.02, -0.02]$
C. $(-\infty, a]$, where $a \in [-0.98, 3.02]$
D. $[a, \infty)$, where $a \in [-0.98, 2.02]$
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.

$$-8 + 4x < \frac{44x - 7}{6} \leq 8 + 7x$$

- A. $(-\infty, a) \cup [b, \infty)$, where $a \in [-0.95, 5.05]$ and $b \in [-32.5, -23.5]$

- B. $(a, b]$, where $a \in [2.05, 9.05]$ and $b \in [-30.5, -21.5]$
 - C. $[a, b)$, where $a \in [-1.95, 4.05]$ and $b \in [-29.5, -21.5]$
 - D. $(-\infty, a] \cup (b, \infty)$, where $a \in [-1.95, 3.05]$ and $b \in [-28.5, -25.5]$
 - 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.

$$\frac{8}{3} - \frac{4}{4}x < \frac{3}{6}x + \frac{3}{7}$$

- A. (a, ∞) , where $a \in [0.9, 3]$
 - B. $(-\infty, a)$, where $a \in [0.49, 2.49]$
 - C. (a, ∞) , where $a \in [-1.6, -0.5]$
 - D. $(-\infty, a)$, where $a \in [-2.49, 0.51]$
 - E. None of the above.
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