

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

No more than 9 units from the number 5.

- A. $(-\infty, 4] \cup [14, \infty)$
- B. $(4, 14)$
- C. $[4, 14]$
- D. $(-\infty, 4) \cup (14, \infty)$
- 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.

$$-4x - 7 \leq 7x + 6$$

- A. $(-\infty, a]$, where $a \in [-2.7, -0.4]$
- B. $[a, \infty)$, where $a \in [-0.3, 2.6]$
- C. $[a, \infty)$, where $a \in [-2.7, 0.6]$
- D. $(-\infty, a]$, where $a \in [0.1, 2]$
- 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.

$$9 - 8x < \frac{-7x + 4}{4} \leq 6 - 3x$$

- A. $(-\infty, a) \cup [b, \infty)$, where $a \in [-3.28, -0.28]$ and $b \in [-8, -3]$
- B. $(a, b]$, where $a \in [-2.2, 0.9]$ and $b \in [-4, -3]$
- C. $(-\infty, a] \cup (b, \infty)$, where $a \in [-3.28, -0.28]$ and $b \in [-5, 0]$
- D. $[a, b)$, where $a \in [-6.28, -0.28]$ and $b \in [-7, 1]$

E. None of the above.

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

$$-5 + 8x > 9x \text{ or } -6 + 8x < 10x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [1, 6]$ and $b \in [3, 9]$
 - B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-7, -4]$ and $b \in [-5, -2]$
 - C. $(-\infty, a) \cup (b, \infty)$, where $a \in [0, 7]$ and $b \in [3, 7]$
 - D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7, 0]$ and $b \in [-5, -1]$
 - E. $(-\infty, \infty)$
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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{3}{6} - \frac{6}{4}x > \frac{-4}{8}x + \frac{6}{2}$$

- A. $(-\infty, a)$, where $a \in [2.5, 4.5]$
 - B. (a, ∞) , where $a \in [-3.5, 0.5]$
 - C. (a, ∞) , where $a \in [2.5, 4.5]$
 - D. $(-\infty, a)$, where $a \in [-2.5, -1.5]$
 - E. None of the above.
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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-5 + 9x > 10x \text{ or } -8 - 3x < 5x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [1, 3]$ and $b \in [0, 9]$
- B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-6, -3]$ and $b \in [-4, 0]$

- C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5, -3]$ and $b \in [-6, 0]$
 - D. $(-\infty, a) \cup (b, \infty)$, where $a \in [1, 2]$ and $b \in [3, 8]$
 - E. $(-\infty, \infty)$
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7. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

Less than 3 units from the number 9.

- A. $(-6, 12)$
 - B. $[-6, 12]$
 - C. $(-\infty, -6) \cup (12, \infty)$
 - D. $(-\infty, -6] \cup [12, \infty)$
 - E. None of the above
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8. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-7}{2} - \frac{8}{3}x \leq \frac{-6}{6}x - \frac{9}{9}$$

- A. $(-\infty, a]$, where $a \in [-2.5, -0.5]$
 - B. $(-\infty, a]$, where $a \in [1.5, 2.5]$
 - C. $[a, \infty)$, where $a \in [-0.5, 4.5]$
 - D. $[a, \infty)$, where $a \in [-1.5, 0.5]$
 - 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.

$$-9x - 5 \leq -3x - 6$$

- A. $[a, \infty)$, where $a \in [0.1, 0.49]$
 - B. $(-\infty, a]$, where $a \in [-1.12, 0.16]$
 - C. $(-\infty, a]$, where $a \in [-0.16, 0.87]$
 - D. $[a, \infty)$, where $a \in [-1.17, -0.04]$
 - 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.

$$-9 - 3x \leq \frac{-19x - 4}{8} < -6 - 4x$$

- A. $(a, b]$, where $a \in [10.6, 20.6]$ and $b \in [2.38, 4.38]$
 - B. $(-\infty, a) \cup [b, \infty)$, where $a \in [7.6, 14.6]$ and $b \in [0.38, 5.38]$
 - C. $[a, b)$, where $a \in [12.6, 16.6]$ and $b \in [2.38, 7.38]$
 - D. $(-\infty, a] \cup (b, \infty)$, where $a \in [10.6, 17.6]$ and $b \in [3.38, 5.38]$
 - E. None of the above.
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