

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

Less than 9 units from the number 6.

- A. $(-\infty, -3) \cup (15, \infty)$
 - B. $(-3, 15)$
 - C. $[-3, 15]$
 - D. $(-\infty, -3] \cup [15, \infty)$
 - 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.

$$-5x + 6 \leq 6x + 10$$

- A. $(-\infty, a]$, where $a \in [0.06, 1.68]$
 - B. $(-\infty, a]$, where $a \in [-0.51, -0.32]$
 - C. $[a, \infty)$, where $a \in [0.14, 0.87]$
 - D. $[a, \infty)$, where $a \in [-0.57, 0.31]$
 - 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.

$$-7 - 5x < \frac{-12x - 5}{3} \leq -9 - 9x$$

- A. $(-\infty, a] \cup (b, \infty)$, where $a \in [-6, -4.5]$ and $b \in [-2.92, -0.6]$
- B. $[a, b)$, where $a \in [-6.75, -3.75]$ and $b \in [-1.8, 0]$
- C. $(-\infty, a) \cup [b, \infty)$, where $a \in [-8.25, -3.75]$ and $b \in [-3.75, 0]$
- D. $(a, b]$, where $a \in [-6.75, -4.5]$ and $b \in [-2.25, 0]$

E. None of the above.

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

$$-4x - 6 < 9x + 3$$

- A. $(-\infty, a)$, where $a \in [-1.27, -0.48]$
 - B. $(-\infty, a)$, where $a \in [0.09, 1.26]$
 - C. (a, ∞) , where $a \in [-0.05, 2.51]$
 - D. (a, ∞) , where $a \in [-1.55, -0.11]$
 - E. None of the above.
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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

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

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.85, -0.07]$ and $b \in [3, 6]$
 - B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-8.17, -3.52]$ and $b \in [-5.25, 4.5]$
 - C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.7, -4.65]$ and $b \in [-1.65, 4.35]$
 - D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-3.67, -2.02]$ and $b \in [3.52, 6.3]$
 - E. $(-\infty, \infty)$
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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-8 + 5x \leq \frac{25x - 9}{4} < 9 + 3x$$

- A. $(-\infty, a] \cup (b, \infty)$, where $a \in [-8.25, 2.25]$ and $b \in [-0.75, 5.25]$
- B. $(-\infty, a) \cup [b, \infty)$, where $a \in [-5.25, -3.75]$ and $b \in [-1.5, 4.5]$

- C. $(a, b]$, where $a \in [-8.25, -3.75]$ and $b \in [3, 7.5]$
 - D. $[a, b)$, where $a \in [-5.25, 3.75]$ and $b \in [1.5, 7.5]$
 - 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.

$$-7 + 8x > 11x \text{ or } 6 + 4x < 5x$$

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.75, 0.75]$ and $b \in [4.5, 6.75]$
 - B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.25, 0.15]$ and $b \in [4.5, 15]$
 - C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-6.6, -4.65]$ and $b \in [-1.5, 3]$
 - D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-9.75, -5.25]$ and $b \in [2.25, 5.25]$
 - 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.

$$\frac{10}{3} - \frac{4}{9}x \geq \frac{4}{7}x + \frac{3}{5}$$

- A. $(-\infty, a]$, where $a \in [0, 3.75]$
 - B. $[a, \infty)$, where $a \in [2.25, 6]$
 - C. $(-\infty, a]$, where $a \in [-6, -0.75]$
 - D. $[a, \infty)$, where $a \in [-5.25, 0]$
 - 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.

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

- A. $(-\infty, a]$, where $a \in [0.75, 4.5]$
 - B. $[a, \infty)$, where $a \in [-2.32, -0.9]$
 - C. $[a, \infty)$, where $a \in [-0.22, 1.57]$
 - D. $(-\infty, a]$, where $a \in [-6, 0.75]$
 - E. None of the above.
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10. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

No less than 6 units from the number 2.

- A. $(4, 8)$
 - B. $(-\infty, 4) \cup (8, \infty)$
 - C. $(-\infty, 4] \cup [8, \infty)$
 - D. $[4, 8]$
 - E. None of the above
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