

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

No more than 4 units from the number 3.

- A. $(-1, 7)$
 - B. $[-1, 7]$
 - C. $(-\infty, -1) \cup (7, \infty)$
 - D. $(-\infty, -1] \cup [7, \infty)$
 - 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.

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

- A. (a, ∞) , where $a \in [-4.35, -0.3]$
 - B. $(-\infty, a)$, where $a \in [0.75, 5.25]$
 - C. (a, ∞) , where $a \in [0.6, 3.6]$
 - D. $(-\infty, a)$, where $a \in [-3, -0.75]$
 - 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.

$$-6 - 8x < \frac{-32x - 9}{7} \leq 8 - 5x$$

- A. $(-\infty, a) \cup [b, \infty)$, where $a \in [-4.27, 0.75]$ and $b \in [16.5, 27]$
- B. $(-\infty, a] \cup (b, \infty)$, where $a \in [-4.8, -0.82]$ and $b \in [16.5, 21.75]$
- C. $(a, b]$, where $a \in [-1.8, -0.45]$ and $b \in [18.75, 24]$
- D. $[a, b)$, where $a \in [-1.8, 1.05]$ and $b \in [19.5, 26.25]$

E. None of the above.

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

More than 6 units from the number 10.

- A. $[-4, 16]$
B. $(-\infty, -4] \cup [16, \infty)$
C. $(-\infty, -4) \cup (16, \infty)$
D. $(-4, 16)$
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.

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

- A. (a, ∞) , where $a \in [-1.5, -1.35]$
B. (a, ∞) , where $a \in [0.45, 1.95]$
C. $(-\infty, a)$, where $a \in [0, 2.25]$
D. $(-\infty, a)$, where $a \in [-6, 0]$
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.

$$-5x - 3 < 10x - 8$$

- A. (a, ∞) , where $a \in [0.16, 1.2]$
B. (a, ∞) , where $a \in [-1.53, 0.15]$

- C. $(-\infty, a)$, where $a \in [-0.08, 1.1]$
 - D. $(-\infty, a)$, where $a \in [-0.66, 0.1]$
 - 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.

$$-9 + 7x > 8x \text{ or } -6 + 8x < 10x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-12, 0]$ and $b \in [-4.5, 2.25]$
 - B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-12.75, -7.5]$ and $b \in [-11.25, 0]$
 - C. $(-\infty, a] \cup [b, \infty)$, where $a \in [0.75, 3.75]$ and $b \in [6.75, 12]$
 - D. $(-\infty, a) \cup (b, \infty)$, where $a \in [2.25, 4.5]$ and $b \in [6.75, 14.25]$
 - 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.

$$-8 - 3x \leq \frac{-5x + 7}{3} < 8 - 4x$$

- A. $[a, b)$, where $a \in [3, 9]$ and $b \in [-8.25, 2.25]$
 - B. $(-\infty, a) \cup [b, \infty)$, where $a \in [3.75, 8.25]$ and $b \in [-4.5, 0.75]$
 - C. $(a, b]$, where $a \in [4.5, 10.5]$ and $b \in [-6, -1.5]$
 - D. $(-\infty, a] \cup (b, \infty)$, where $a \in [6, 8.25]$ and $b \in [-3.75, 2.25]$
 - 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.

$$-6x - 6 \geq 5x + 7$$

- A. $[a, \infty)$, where $a \in [-0.82, 5.18]$
 - B. $(-\infty, a]$, where $a \in [-0.5, 1.3]$
 - C. $[a, \infty)$, where $a \in [-4.18, 0.82]$
 - D. $(-\infty, a]$, where $a \in [-2.9, -1.1]$
 - 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.

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

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-1.5, 9]$ and $b \in [1.5, 9]$
 - B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-6.75, -2.25]$ and $b \in [-6, 0]$
 - C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-2.25, 3]$ and $b \in [0.75, 9.75]$
 - D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-4.5, -3]$ and $b \in [-3.75, 0]$
 - E. $(-\infty, \infty)$
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