

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

$$\frac{7}{6} - \frac{5}{8}x \leq \frac{4}{9}x + \frac{10}{2}$$

- A. $[a, \infty)$, where $a \in [0, 6]$
 - B. $[a, \infty)$, where $a \in [-4.5, 0]$
 - C. $(-\infty, a]$, where $a \in [-6.75, -2.25]$
 - D. $(-\infty, a]$, where $a \in [1.5, 6]$
 - 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.

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

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.75, 2.25]$ and $b \in [5.25, 9]$
 - B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4.5, 0.75]$ and $b \in [5.25, 9]$
 - C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-8.25, -3.75]$ and $b \in [0.75, 4.5]$
 - D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-7.5, -4.5]$ and $b \in [1.5, 5.25]$
 - 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.

$$-4 - 5x < \frac{-26x - 4}{6} \leq 4 - 5x$$

- A. $(a, b]$, where $a \in [-1.5, 7.5]$ and $b \in [-8.25, -5.25]$
- B. $[a, b)$, where $a \in [3.75, 8.25]$ and $b \in [-11.25, 0]$
- C. $(-\infty, a] \cup (b, \infty)$, where $a \in [3.75, 6.75]$ and $b \in [-14.25, 0]$
- D. $(-\infty, a) \cup [b, \infty)$, where $a \in [4.5, 8.25]$ and $b \in [-11.25, 2.25]$

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.

Less than 2 units from the number -4 .

- A. $(-\infty, -6] \cup [-2, \infty)$
 - B. $[-6, -2]$
 - C. $(-6, -2)$
 - D. $(-\infty, -6) \cup (-2, \infty)$
 - 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.

$$4x + 9 > 5x - 5$$

- A. (a, ∞) , where $a \in [-17, -4]$
 - B. $(-\infty, a)$, where $a \in [13, 19]$
 - C. (a, ∞) , where $a \in [9, 20]$
 - D. $(-\infty, a)$, where $a \in [-16, -3]$
 - 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.

$$-9 + 6x > 8x \text{ or } -5 + 4x < 6x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-6, 0.75]$ and $b \in [-6, -1.5]$
- B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.75, 6]$ and $b \in [3.75, 6.75]$
- C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-0.75, 6.75]$ and $b \in [-1.5, 6]$

- D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-5.25, -3]$ and $b \in [-8.25, 3]$
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.

More than 6 units from the number 3.

- A. $(-\infty, -3) \cup (9, \infty)$
B. $(-\infty, -3] \cup [9, \infty)$
C. $(-3, 9)$
D. $[-3, 9]$
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.

$$-9 + 5x \leq \frac{24x - 3}{3} < 5 + 7x$$

- A. $[a, b)$, where $a \in [-3.75, 0.75]$ and $b \in [2.25, 8.25]$
B. $(-\infty, a) \cup [b, \infty)$, where $a \in [-5.25, 0]$ and $b \in [2.25, 6.75]$
C. $(-\infty, a] \cup (b, \infty)$, where $a \in [-3, 0.75]$ and $b \in [4.5, 13.5]$
D. $(a, b]$, where $a \in [-7.5, -0.75]$ and $b \in [5.25, 6.75]$
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.

$$-8x - 3 \geq 9x - 4$$

- A. $(-\infty, a]$, where $a \in [-0.04, 0.11]$

- B. $[a, \infty)$, where $a \in [-0.09, 0.02]$
 - C. $(-\infty, a]$, where $a \in [-0.12, -0.02]$
 - D. $[a, \infty)$, where $a \in [0.02, 0.11]$
 - 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.

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

- A. $(-\infty, a)$, where $a \in [0.75, 6]$
 - B. (a, ∞) , where $a \in [0.75, 2.25]$
 - C. $(-\infty, a)$, where $a \in [-6.75, 0.75]$
 - D. (a, ∞) , where $a \in [-2.25, 0]$
 - E. None of the above.
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