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

$$4 - 3x < \frac{-20x - 6}{8} \leq 5 - 3x$$

A. $(-\infty, a] \cup (b, \infty)$, where $a \in [-11.5, -7.5]$ and $b \in [-13.5, -10.5]$

B. $(a, b]$, where $a \in [-10.5, -4.5]$ and $b \in [-12.5, -3.5]$

C. $[a, b)$, where $a \in [-9.5, -6.5]$ and $b \in [-11.5, -9.5]$

D. $(-\infty, a) \cup [b, \infty)$, where $a \in [-9.5, -8.5]$ and $b \in [-12.5, -6.5]$

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.

$$5x - 8 \geq 10x + 5$$

A. $[a, \infty)$, where $a \in [-0.4, 9.6]$

B. $[a, \infty)$, where $a \in [-5.6, 1.4]$

C. $(-\infty, a]$, where $a \in [2.6, 9.6]$

D. $(-\infty, a]$, where $a \in [-10.6, 1.4]$

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.

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

A. $(-\infty, a]$, where $a \in [-4.31, 0.69]$

B. $(-\infty, a]$, where $a \in [2.31, 5.31]$

C. $[a, \infty)$, where $a \in [-5.31, -0.31]$

D. $[a, \infty)$, where $a \in [1.31, 6.31]$

E. None of the above.

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

$$-5 + 9x > 10x \text{ or } 9 + 3x < 4x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-6, 1]$ and $b \in [9, 15]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-14, -6]$ and $b \in [4, 7]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-5, -3]$ and $b \in [8, 13]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-10, -7]$ and $b \in [3, 7]$

E. $(-\infty, \infty)$

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

No less than 7 units from the number 1.

A. $[6, 8]$

B. $(6, 8)$

C. $(-\infty, 6] \cup [8, \infty)$

D. $(-\infty, 6) \cup (8, \infty)$

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.

$$-5 + 3x > 4x \text{ or } -6 + 7x < 9x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [3, 4]$ and $b \in [-1, 8]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-6, -3]$ and $b \in [-5, -1]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-6, -4]$ and $b \in [-4, 1]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [3, 5]$ and $b \in [2, 9]$

E. $(-\infty, \infty)$

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

$$\frac{4}{5} - \frac{4}{6}x \leq \frac{3}{3}x + \frac{5}{2}$$

A. $(-\infty, a]$, where $a \in [-1.02, -0.02]$

B. $(-\infty, a]$, where $a \in [0.02, 3.02]$

C. $[a, \infty)$, where $a \in [-2.02, -0.02]$

D. $[a, \infty)$, where $a \in [-0.98, 2.02]$

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.

$$-5 - 6x \leq \frac{-28x + 7}{5} < -4 - 6x$$

A. $(-\infty, a) \cup [b, \infty)$, where $a \in [-16, -12]$ and $b \in [-16.5, -11.5]$

B. $(a, b]$, where $a \in [-18, -14]$ and $b \in [-16.5, -11.5]$

C. $[a, b)$, where $a \in [-22, -15]$ and $b \in [-16.5, -12.5]$

D. $(-\infty, a] \cup (b, \infty)$, where $a \in [-16, -12]$ and $b \in [-16.5, -10.5]$

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.

$$-8x - 7 \leq 8x - 4$$

A. $[a, \infty)$, where $a \in [0.08, 0.31]$

B. $(-\infty, a]$, where $a \in [-0.05, 0.4]$

C. $(-\infty, a]$, where $a \in [-1.19, -0.05]$

D. $[a, \infty)$, where $a \in [-0.33, -0.03]$

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.

More than 5 units from the number -9.

A. $(-14, -4)$

B. $[-14, -4]$

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

D. $(-\infty, -14) \cup (-4, \infty)$

E. None of the above
