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

$$5 - 8x \leq \frac{-16x - 9}{4} < 9 - 5x$$

   A. $[a, b)$, where $a \in [-1.19, 3.81]$ and $b \in [11.25, 16.25]$

   B. $(-\infty, a] \cup (b, \infty)$, where $a \in [1.81, 2.81]$ and $b \in [10.25, 12.25]$

   C. $(-\infty, a) \cup [b, \infty)$, where $a \in [0.81, 3.81]$ and $b \in [11.25, 15.25]$

   D. $(a, b]$, where $a \in [0.81, 4.81]$ and $b \in [11.25, 16.25]$

   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.

$$-9x - 8 \leq 10x - 9$$

   A. $[a, \infty)$, where $a \in [-0.05, 0.23]$

   B. $(-\infty, a]$, where $a \in [-0.05, 0.22]$

   C. $(-\infty, a]$, where $a \in [-0.14, -0.03]$

   D. $[a, \infty)$, where $a \in [-0.1, 0.05]$

   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.

$$\frac{3}{9} + \frac{3}{7}x \geq \frac{10}{8}x - \frac{8}{6}$$

   A. $(-\infty, a]$, where $a \in [-2.03, -0.03]$

   B. $[a, \infty)$, where $a \in [-0.97, 3.03]$

   C. $(-\infty, a]$, where $a \in [1.03, 4.03]$

   D. $[a, \infty)$, where $a \in [-3.03, -0.03]$

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.

$$3 + 6x > 8x \text{ or } 8 + 4x < 6x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-5, 1]$ and $b \in [-2.5, -0.5]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5, -2]$ and $b \in [-2.5, 1.5]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [0.5, 2.5]$ and $b \in [3, 8]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-0.5, 3.5]$ and $b \in [2, 5]$

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.

Less than 9 units from the number 7.

A. $(-2, 16)$

B. $(-\infty, -2] \cup [16, \infty)$

C. $[-2, 16]$

D. $(-\infty, -2) \cup (16, \infty)$

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.

$$-9 + 6x > 8x \text{ or } 4 + 5x < 7x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2, 3]$ and $b \in [2.5, 8.5]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.5, -2.5]$ and $b \in [0.5, 3.7]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-2.8, 1.5]$ and $b \in [3, 4.7]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-8.5, -2.5]$ and $b \in [-5, 4]$

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.

$$\frac{7}{3} - \frac{3}{5}x < \frac{10}{7}x - \frac{5}{4}$$

A. (a, ∞), where $a \in [-2.77, 0.23]$

B. $(-\infty, a)$, where $a \in [-0.23, 4.77]$

C. (a, ∞), where $a \in [0.77, 3.77]$

D. $(-\infty, a)$, where $a \in [-2.77, 1.23]$

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.

$$-6 + 8x \leq \frac{68x - 3}{8} < -5 + 6x$$

A. $(a, b]$, where $a \in [10.25, 12.25]$ and $b \in [0.85, 3.85]$

B. $(-\infty, a) \cup [b, \infty)$, where $a \in [10.25, 13.25]$ and $b \in [1, 3.6]$

C. $(-\infty, a] \cup (b, \infty)$, where $a \in [10.25, 13.25]$ and $b \in [-1.15, 4.85]$

D. $[a, b)$, where $a \in [10.25, 14.25]$ and $b \in [-0.15, 5.85]$

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.

$$-10x + 10 < -8x - 8$$

A. (a, ∞), where $a \in [8, 16]$

B. $(-\infty, a)$, where $a \in [-15, -7]$

C. (a, ∞), where $a \in [-11, -2]$

D. $(-\infty, a)$, where $a \in [7, 14]$

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.

Less than 2 units from the number -1.

A. $(-\infty, -3) \cup (1, \infty)$

B. $[-3, 1]$

C. $(-3, 1)$

D. $(-\infty, -3] \cup [1, \infty)$

E. None of the above
