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

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

A. $(-\infty, a) \cup [b, \infty)$, where $a \in [0, 4]$ and $b \in [-3, 1]$

B. $(a, b]$, where $a \in [0.1, 2.8]$ and $b \in [-4, -1]$

C. $[a, b)$, where $a \in [0, 7]$ and $b \in [-2, 1]$

D. $(-\infty, a] \cup (b, \infty)$, where $a \in [0.6, 1.6]$ and $b \in [-3.4, -0.1]$

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.

$$\frac{7}{8} - \frac{8}{4}x > \frac{-5}{3}x - \frac{6}{9}$$

A. $(-\infty, a)$, where $a \in [-5.62, -2.62]$

B. (a, ∞), where $a \in [2.62, 5.62]$

C. $(-\infty, a)$, where $a \in [3.62, 9.62]$

D. (a, ∞), where $a \in [-5.62, -1.62]$

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.

$$-4 + 8x > 11x \text{ or } 9 + 7x < 8x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-13, -6]$ and $b \in [-3.67, 2.33]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-9, -6]$ and $b \in [0.33, 2.33]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.33, -0.33]$ and $b \in [8, 10]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.33, 0.67]$ and $b \in [7, 13]$

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

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

$$-9x + 7 \geq -4x + 10$$

A. $(-\infty, a]$, where $a \in [-0.33, 0.62]$

B. $[a, \infty)$, where $a \in [-3, 0.2]$

C. $(-\infty, a]$, where $a \in [-0.96, 0.24]$

D. $[a, \infty)$, where $a \in [0.1, 1.1]$

E. None of the above.

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5. 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 -9.

A. $(-\infty, -15) \cup (-3, \infty)$

B. $[-15, -3]$

C. $(-15, -3)$

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

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.

$$\frac{7}{4} - \frac{3}{6}x \geq \frac{5}{2}x - \frac{4}{3}$$

A. $(-\infty, a]$, where $a \in [-4.03, -0.03]$

B. $[a, \infty)$, where $a \in [0.9, 2.8]$

C. $[a, \infty)$, where $a \in [-2.4, 0.3]$

D. $(-\infty, a]$, where $a \in [0.03, 5.03]$

E. None of the above.

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

No more than 3 units from the number 4.

A. $(1, 7)$

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

C. $[1, 7]$

D. $(-\infty, 1) \cup (7, \infty)$

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.

$$-9 + 8x < \frac{75x + 9}{9} \leq -8 + 6x$$

A. $(a, b]$, where $a \in [-31, -28]$ and $b \in [-4.86, -1.86]$

B. $(-\infty, a] \cup (b, \infty)$, where $a \in [-35, -29]$ and $b \in [-6.86, 1.14]$

C. $[a, b)$, where $a \in [-31, -27]$ and $b \in [-6.86, 0.14]$

D. $(-\infty, a) \cup [b, \infty)$, where $a \in [-33, -29]$ and $b \in [-5.86, -0.86]$

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.

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

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [3.5, 6.5]$ and $b \in [7, 10]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [3.5, 5.5]$ and $b \in [5, 10]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-9, -7]$ and $b \in [-5.5, -3.5]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-10, -7]$ and $b \in [-8.5, -1.5]$

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

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

$$-8x + 3 < -4x - 10$$

A. (a, ∞), where $a \in [-3.25, -0.25]$

B. $(-\infty, a)$, where $a \in [-2.75, 10.25]$

C. (a, ∞), where $a \in [2.25, 7.25]$

D. $(-\infty, a)$, where $a \in [-3.25, 1.75]$

E. None of the above.
