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

$$-8 + 4x > 6x \text{ or } 3 + 9x < 12x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-3, 2]$ and $b \in [4, 5]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.6, 2.1]$ and $b \in [4, 7]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4, -3]$ and $b \in [1, 2]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-5.1, -1.2]$ and $b \in [1, 3]$

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

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

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

A. (a, ∞), where $a \in [-10.09, -4.09]$

B. $(-\infty, a)$, where $a \in [-9.09, -5.09]$

C. $(-\infty, a)$, where $a \in [4.09, 9.09]$

D. (a, ∞), where $a \in [6.09, 11.09]$

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.

$$-4 + 4x < \frac{59x + 8}{7} \leq 5 + 8x$$

A. $[a, b)$, where $a \in [-3.5, 0.3]$ and $b \in [5, 11]$

B. $(-\infty, a) \cup [b, \infty)$, where $a \in [-2.6, -0.7]$ and $b \in [5, 12]$

C. $(-\infty, a] \cup (b, \infty)$, where $a \in [-1.7, -0.4]$ and $b \in [9, 11]$

D. $(a, b]$, where $a \in [-3.16, 0.84]$ and $b \in [6, 12]$

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.

$$-6x - 3 > 9x - 10$$

A. $(-\infty, a)$, where $a \in [0.25, 0.66]$

B. $(-\infty, a)$, where $a \in [-0.47, -0.21]$

C. (a, ∞), where $a \in [-0.39, 0.59]$

D. (a, ∞), where $a \in [-1.06, 0.39]$

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.

No more than 3 units from the number 8.

A. $(-\infty, -5] \cup [11, \infty)$

B. $(-\infty, -5) \cup (11, \infty)$

C. $[-5, 11]$

D. $(-5, 11)$

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.

$$-3x + 10 \leq 3x - 9$$

A. $[a, \infty)$, where $a \in [1.17, 6.17]$

B. $(-\infty, a]$, where $a \in [-0.83, 6.17]$

C. $(-\infty, a]$, where $a \in [-6.17, -1.17]$

D. $[a, \infty)$, where $a \in [-7.17, 0.83]$

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.

$$-3 + 4x \leq \frac{66x + 3}{9} < 4 + 7x$$

A. $(-\infty, a] \cup (b, \infty)$, where $a \in [-4.2, 0.1]$ and $b \in [10, 13]$

B. $(-\infty, a) \cup [b, \infty)$, where $a \in [-3, 0]$ and $b \in [8, 13]$

C. $[a, b)$, where $a \in [-2, 0]$ and $b \in [6, 13]$

D. $(a, b]$, where $a \in [-1.6, -0.5]$ and $b \in [10, 12]$

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.

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

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4.9, -2.9]$ and $b \in [-3.33, 2.67]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-1.9, -1.2]$ and $b \in [3, 14]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2, -0.8]$ and $b \in [3.1, 7.3]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-4.8, -2.9]$ and $b \in [1, 3.3]$

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

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

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

A. $(-\infty, a)$, where $a \in [4.37, 7.37]$

B. (a, ∞), where $a \in [3.37, 8.37]$

C. (a, ∞), where $a \in [-5.37, -1.37]$

D. $(-\infty, a)$, where $a \in [-6.37, -2.37]$

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.

No more than 8 units from the number -2.

A. $[-10, 6]$

B. $(-\infty, -10) \cup (6, \infty)$

C. $(-\infty, -10] \cup [6, \infty)$

D. $(-10, 6)$

E. None of the above
