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

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

A. (a, ∞), where $a \in [1.71, 2.71]$

B. $(-\infty, a)$, where $a \in [-6.71, 1.29]$

C. (a, ∞), where $a \in [-5.71, 0.29]$

D. $(-\infty, a)$, where $a \in [0.71, 5.71]$

E. None of the above.

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

Less than 10 units from the number 7.

A. $(-\infty, -3] \cup [17, \infty)$

B. $[-3, 17]$

C. $(-3, 17)$

D. $(-\infty, -3) \cup (17, \infty)$

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.

$$-6 - 3x \leq \frac{-22x - 3}{9} < 4 - 3x$$

A. $(-\infty, a) \cup [b, \infty)$, where $a \in [10.2, 11.2]$ and $b \in [-11.8, -3.8]$

B. $[a, b)$, where $a \in [7.2, 13.2]$ and $b \in [-8.8, -3.8]$

C. $(-\infty, a] \cup (b, \infty)$, where $a \in [5.2, 12.2]$ and $b \in [-9.8, -6.8]$

D. $(a, b]$, where $a \in [6.2, 14.2]$ and $b \in [-7.8, -4.8]$

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.

$$\frac{-5}{3} - \frac{10}{5}x \leq \frac{-3}{4}x - \frac{3}{9}$$

A. $(-\infty, a]$, where $a \in [-2.9, -0.9]$

B. $[a, \infty)$, where $a \in [-3.07, 0.93]$

C. $[a, \infty)$, where $a \in [0.07, 2.07]$

D. $(-\infty, a]$, where $a \in [0.4, 3.1]$

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.

$$-3 + 8x > 9x \text{ or } -6 + 7x < 10x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-3, 0]$ and $b \in [-2, 2]$

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

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [2, 9]$ and $b \in [-1, 4]$

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

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

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

$$-7 + 7x > 8x \text{ or } 3 + 3x < 6x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4, 1]$ and $b \in [7, 10]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2, 1]$ and $b \in [7, 12]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-9, -6]$ and $b \in [-2, 4]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7, -6]$ and $b \in [-2, 3]$

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.

$$-5 + 6x \leq \frac{40x + 9}{6} < -7 + 4x$$

A. $[a, b)$, where $a \in [-9.75, -7.75]$ and $b \in [-7.19, -2.19]$

B. $(-\infty, a) \cup [b, \infty)$, where $a \in [-12.75, -6.75]$ and $b \in [-6.19, 0.81]$

C. $(a, b]$, where $a \in [-10.75, -7.75]$ and $b \in [-7.19, -1.19]$

D. $(-\infty, a] \cup (b, \infty)$, where $a \in [-9.75, -8.75]$ and $b \in [-7.19, 1.81]$

E. None of the above.

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

No more than 5 units from the number 7.

A. $[2, 12]$

B. $(-\infty, 2] \cup [12, \infty)$

C. $(-\infty, 2) \cup (12, \infty)$

D. $(2, 12)$

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.

$$\frac{6}{5} - \frac{6}{8}x \leq \frac{-5}{6}x - \frac{9}{4}$$

A. $(-\infty, a]$, where $a \in [40.4, 43.4]$

B. $(-\infty, a]$, where $a \in [-42.4, -39.4]$

C. $[a, \infty)$, where $a \in [40.4, 43.4]$

D. $[a, \infty)$, where $a \in [-43.4, -39.4]$

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.

$$3x - 5 < 6x - 3$$

A. $(-\infty, a)$, where $a \in [-4.5, -0.5]$

B. $(-\infty, a)$, where $a \in [0.3, 3.3]$

C. (a, ∞), where $a \in [-0.24, 1.18]$

D. (a, ∞), where $a \in [-2.11, -0.11]$

E. None of the above.
