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

$$7x + 3 < 8x - 9$$

A. $(-\infty, a)$, where $a \in [-13, -10]$

B. (a, ∞), where $a \in [-18, -8]$

C. $(-\infty, a)$, where $a \in [7, 13]$

D. (a, ∞), where $a \in [9, 14]$

E. None of the above.

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

$$\text{Less than 4 units from the number } -4.$$

A. $[-8, 0]$

B. $(-\infty, -8) \cup (0, \infty)$

C. $(-8, 0)$

D. $(-\infty, -8] \cup [0, \infty)$

E. None of the above

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

$$-8 + 8x > 9x \text{ or } 4 + 9x < 10x$$

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

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-8, -7]$ and $b \in [2, 6]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-9, -7]$ and $b \in [3, 6]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5, -1]$ and $b \in [7, 12]$

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

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

$$5x + 5 \geq 10x - 3$$

A. $(-\infty, a]$, where $a \in [-1.4, 6.6]$

B. $(-\infty, a]$, where $a \in [-1.6, -0.6]$

C. $[a, \infty)$, where $a \in [-0.6, 3.4]$

D. $[a, \infty)$, where $a \in [-3.4, -0.4]$

E. None of the above.

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

Less than 8 units from the number -1.

A. $(-9, 7)$

B. $(-\infty, -9] \cup [7, \infty)$

C. $[-9, 7]$

D. $(-\infty, -9) \cup (7, \infty)$

E. None of the above

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

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

A. $[a, \infty)$, where $a \in [-2, -1]$

B. $(-\infty, a]$, where $a \in [2, 7]$

C. $[a, \infty)$, where $a \in [2, 3]$

   D. $(-\infty, a]$, where $a \in [-3, -1]$

   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.

$$-9 + 6x < \frac{56x + 9}{9} \le -7 + 6x$$

   A. $(a, b]$, where $a \in [42, 47]$ and $b \in [33, 41]$

   B. $(-\infty, a) \cup [b, \infty)$, where $a \in [42, 49]$ and $b \in [35, 41]$

   C. $[a, b)$, where $a \in [45, 51]$ and $b \in [36, 39]$

   D. $(-\infty, a] \cup (b, \infty)$, where $a \in [44, 50]$ and $b \in [34, 39]$

   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.

$$-4 + 8x < \frac{76x + 9}{9} \le 9 + 3x$$

   A. $(a, b]$, where $a \in [10.25, 13.25]$ and $b \in [-1.47, -0.47]$

   B. $[a, b)$, where $a \in [11.25, 13.25]$ and $b \in [-4.47, -0.47]$

   C. $(-\infty, a] \cup (b, \infty)$, where $a \in [9.25, 19.25]$ and $b \in [-4.47, 0.53]$

   D. $(-\infty, a) \cup [b, \infty)$, where $a \in [10.25, 13.25]$ and $b \in [-3.47, -0.47]$

   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.

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

   A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5, 0]$ and $b \in [-6.67, -0.67]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-5, -1]$ and $b \in [-4.67, 0.33]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-0.33, 5.67]$ and $b \in [-1, 6]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-2.33, 2.67]$ and $b \in [3, 5]$

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.

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

A. (a, ∞), where $a \in [-1.55, 1.45]$

B. $(-\infty, a)$, where $a \in [-4.55, 0.45]$

C. $(-\infty, a)$, where $a \in [0.55, 4.55]$

D. (a, ∞), where $a \in [0.55, 3.55]$

E. None of the above.