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

$$-3 + 8x \leq \frac{60x + 6}{7} < 6 + 8x$$

A. $(a, b]$, where $a \in [-7.75, 0.25]$ and $b \in [9, 10]$

B. $(-\infty, a] \cup (b, \infty)$, where $a \in [-11.75, -1.75]$ and $b \in [7, 14]$

C. $[a, b)$, where $a \in [-6.75, -3.75]$ and $b \in [9, 15]$

D. $(-\infty, a) \cup [b, \infty)$, where $a \in [-10.75, -5.75]$ and $b \in [9, 16]$

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.

$$5x + 5 \leq 6x + 6$$

A. $(-\infty, a]$, where $a \in [0, 4]$

B. $(-\infty, a]$, where $a \in [-2, 0]$

C. $[a, \infty)$, where $a \in [-2.7, -0.2]$

D. $[a, \infty)$, where $a \in [0.6, 1.9]$

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.

$$\frac{-8}{6} - \frac{5}{3}x \leq \frac{3}{4}x + \frac{9}{8}$$

A. $(-\infty, a]$, where $a \in [0.02, 3.02]$

B. $[a, \infty)$, where $a \in [0.02, 4.02]$

C. $[a, \infty)$, where $a \in [-2.02, -0.02]$

D. $(-\infty, a]$, where $a \in [-2.02, -0.02]$

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.

$$-3 + 4x > 5x \text{ or } -5 + 4x < 7x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [0.67, 2.67]$ and $b \in [0, 6]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-0.33, 8.67]$ and $b \in [2, 9]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-6, 0]$ and $b \in [-1.67, 2.33]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-6, 1]$ and $b \in [-4.67, 2.33]$

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 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

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

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

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-6.5, -3.5]$ and $b \in [-4.67, 2.33]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [0.67, 6.67]$ and $b \in [3.5, 5.5]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-4.5, -2.5]$ and $b \in [-2.67, 1.33]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-0.33, 4.67]$ and $b \in [3.5, 5.5]$

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.

$$\frac{-9}{4} + \frac{4}{5}x \geq \frac{10}{9}x - \frac{3}{7}$$

A. $[a, \infty)$, where $a \in [-8.86, -1.86]$

B. $[a, \infty)$, where $a \in [3.86, 10.86]$

C. $(-\infty, a]$, where $a \in [-6.86, -4.86]$

D. $(-\infty, a]$, where $a \in [2.86, 6.86]$

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.

$$-6 + 8x \leq \frac{32x - 6}{3} < 5 + 9x$$

A. $(-\infty, a] \cup (b, \infty)$, where $a \in [-5.5, -0.5]$ and $b \in [0.2, 11.2]$

B. $[a, b)$, where $a \in [-3.6, -0.2]$ and $b \in [4.2, 6.2]$

C. $(a, b]$, where $a \in [-2, 1.2]$ and $b \in [2.2, 8.2]$

D. $(-\infty, a) \cup [b, \infty)$, where $a \in [-1.5, -0.5]$ and $b \in [3.2, 9.2]$

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.

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

A. $[a, \infty)$, where $a \in [-0.46, 2.58]$

B. $(-\infty, a]$, where $a \in [0.7, 1.7]$

C. $(-\infty, a]$, where $a \in [-1.9, -0.4]$

D. $[a, \infty)$, where $a \in [-1.18, -0.2]$

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.

More than 8 units from the number 3.

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

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

C. $(-5, 11)$

D. $[-5, 11]$

E. None of the above
