

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

$$-5 - 9x \leq \frac{-76x + 5}{9} < 3 - 9x$$

- A.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [8, 14]$  and  $b \in [-6.4, -0.4]$   
B.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [9, 12]$  and  $b \in [-7.4, -2.4]$   
C.  $(a, b]$ , where  $a \in [8, 14]$  and  $b \in [-5.4, -3.4]$   
D.  $[a, b)$ , where  $a \in [7, 12]$  and  $b \in [-9.4, -2.4]$   
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.

$$-10x - 4 > 5x - 5$$

- A.  $(-\infty, a)$ , where  $a \in [-0.44, 0.04]$   
B.  $(a, \infty)$ , where  $a \in [-0.89, -0.01]$   
C.  $(a, \infty)$ , where  $a \in [0.06, 0.19]$   
D.  $(-\infty, a)$ , where  $a \in [-0.03, 0.14]$   
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.

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

- A.  $[a, \infty)$ , where  $a \in [-14.38, -7.38]$   
B.  $(-\infty, a]$ , where  $a \in [11.38, 14.38]$   
C.  $(-\infty, a]$ , where  $a \in [-13.38, -8.38]$   
D.  $[a, \infty)$ , where  $a \in [12.38, 15.38]$

E. None of the above.

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

No less than 3 units from the number 10.

- A.  $(-\infty, -7] \cup [13, \infty)$
  - B.  $(-7, 13)$
  - C.  $[-7, 13]$
  - D.  $(-\infty, -7) \cup (13, \infty)$
  - 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.

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

- A.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-7, -6]$  and  $b \in [-4, 1]$
  - B.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [3, 4]$  and  $b \in [5, 11]$
  - C.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-12, -6]$  and  $b \in [-5, -1]$
  - D.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [1, 6]$  and  $b \in [0, 8]$
  - 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.

$$-9x + 5 \leq -5x - 8$$

- A.  $(-\infty, a]$ , where  $a \in [0.25, 6.25]$
- B.  $[a, \infty)$ , where  $a \in [-0.75, 4.25]$
- C.  $[a, \infty)$ , where  $a \in [-3.25, 1.75]$

- D.  $(-\infty, a]$ , where  $a \in [-4.25, -1.25]$   
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.

$$\frac{10}{2} - \frac{9}{6}x \leq \frac{-5}{5}x + \frac{3}{4}$$

- A.  $[a, \infty)$ , where  $a \in [7.5, 10.5]$   
B.  $[a, \infty)$ , where  $a \in [-9.5, -7.5]$   
C.  $(-\infty, a]$ , where  $a \in [6.5, 16.5]$   
D.  $(-\infty, a]$ , where  $a \in [-10.5, -5.5]$   
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.

More than 6 units from the number 3.

- A.  $(3, 9)$   
B.  $(-\infty, 3] \cup [9, \infty)$   
C.  $(-\infty, 3) \cup (9, \infty)$   
D.  $[3, 9]$   
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.

$$-7 - 5x < \frac{-40x - 3}{9} \leq 9 - 8x$$

- A.  $[a, b)$ , where  $a \in [-18, -9]$  and  $b \in [0.62, 7.62]$

- B.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [-13, -8]$  and  $b \in [-0.38, 4.62]$
  - C.  $(a, b]$ , where  $a \in [-13, -7]$  and  $b \in [0.62, 3.62]$
  - D.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [-15, -10]$  and  $b \in [1.62, 3.62]$
  - 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.

$$-4 + 3x > 5x \text{ or } 8 + 7x < 8x$$

- A.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-5, 0]$  and  $b \in [6, 9]$
  - B.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-11, -7]$  and  $b \in [-3, 6]$
  - C.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-6, 4]$  and  $b \in [6, 12]$
  - D.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-9, -6]$  and  $b \in [2, 5]$
  - E.  $(-\infty, \infty)$
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