

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

$$-6 + 7x < \frac{61x + 8}{8} \leq -7 + 5x$$

- A.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [-13.5, -6.75]$  and  $b \in [-4.5, -2.25]$   
B.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [-12.75, -9]$  and  $b \in [-5.25, -0.75]$   
C.  $[a, b)$ , where  $a \in [-16.5, -9]$  and  $b \in [-3.75, 2.25]$   
D.  $(a, b]$ , where  $a \in [-15.75, -7.5]$  and  $b \in [-9.75, -1.5]$   
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.

No more than 7 units from the number  $-4$ .

- A.  $(-\infty, -11] \cup [3, \infty)$   
B.  $(-\infty, -11) \cup (3, \infty)$   
C.  $(-11, 3)$   
D.  $[-11, 3]$   
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.

$$\frac{-9}{9} - \frac{10}{8}x < \frac{6}{6}x + \frac{9}{5}$$

- A.  $(-\infty, a)$ , where  $a \in [-0.3, 2.17]$   
B.  $(a, \infty)$ , where  $a \in [0, 6]$   
C.  $(a, \infty)$ , where  $a \in [-2.25, -0.75]$   
D.  $(-\infty, a)$ , where  $a \in [-1.65, -0.82]$

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.

$$3 - 5x < \frac{-17x - 3}{5} \leq 9 - 4x$$

- A.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [1.5, 6.75]$  and  $b \in [12.75, 20.25]$   
B.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [0.75, 9.75]$  and  $b \in [11.25, 16.5]$   
C.  $[a, b)$ , where  $a \in [-1.5, 7.5]$  and  $b \in [15, 20.25]$   
D.  $(a, b]$ , where  $a \in [1.5, 9.75]$  and  $b \in [13.5, 18]$   
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 6 units from the number  $-3$ .

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

$$-9 + 5x > 8x \text{ or } -6 + 4x < 7x$$

- A.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [0, 3.75]$  and  $b \in [1.5, 8.25]$   
B.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [0.75, 2.25]$  and  $b \in [0.75, 3.75]$

- C.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-3.75, -2.25]$  and  $b \in [-3.75, -0.75]$   
D.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-3.75, -1.5]$  and  $b \in [-6, 0]$   
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.

$$-5 + 5x > 7x \text{ or } -3 + 6x < 9x$$

- A.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-4.5, -0.75]$  and  $b \in [-5.25, 1.5]$   
B.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-8.25, 0.75]$  and  $b \in [-2.17, -0.3]$   
C.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-2.25, 6]$  and  $b \in [-0.75, 5.25]$   
D.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-0.75, 5.25]$  and  $b \in [2.17, 2.55]$   
E.  $(-\infty, \infty)$
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8. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7x - 8 > 5x + 5$$

- A.  $(a, \infty)$ , where  $a \in [1.08, 8.08]$   
B.  $(-\infty, a)$ , where  $a \in [-2.08, -0.08]$   
C.  $(-\infty, a)$ , where  $a \in [0.08, 5.08]$   
D.  $(a, \infty)$ , where  $a \in [-7.08, 0.92]$   
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.

$$\frac{5}{3} + \frac{5}{8}x > \frac{10}{6}x - \frac{7}{2}$$

- A.  $(a, \infty)$ , where  $a \in [-6.75, -1.5]$
  - B.  $(-\infty, a)$ , where  $a \in [-8.25, -3]$
  - C.  $(a, \infty)$ , where  $a \in [2.25, 6.75]$
  - D.  $(-\infty, a)$ , where  $a \in [3, 6.75]$
  - 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.

$$-8x - 8 \leq 10x - 9$$

- A.  $(-\infty, a]$ , where  $a \in [-0.76, 0.04]$
  - B.  $(-\infty, a]$ , where  $a \in [-0.02, 0.2]$
  - C.  $[a, \infty)$ , where  $a \in [-0, 0.07]$
  - D.  $[a, \infty)$ , where  $a \in [-0.17, 0.02]$
  - E. None of the above.
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