

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

$$-5 - 3x < \frac{-13x - 3}{6} \leq 9 - 3x$$

- A.  $(a, b]$ , where  $a \in [0.4, 9.4]$  and  $b \in [-12.4, -7.4]$   
B.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [5.4, 9.4]$  and  $b \in [-11.4, -9.4]$   
C.  $[a, b)$ , where  $a \in [2.4, 7.4]$  and  $b \in [-12.4, -6.4]$   
D.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [4.4, 7.4]$  and  $b \in [-11.4, -10.4]$   
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.

$$\frac{6}{3} - \frac{8}{8}x > \frac{-3}{5}x - \frac{9}{6}$$

- A.  $(a, \infty)$ , where  $a \in [8.75, 9.75]$   
B.  $(a, \infty)$ , where  $a \in [-8.75, -5.75]$   
C.  $(-\infty, a)$ , where  $a \in [-10.75, -7.75]$   
D.  $(-\infty, a)$ , where  $a \in [6.75, 10.75]$   
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.

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

- A.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-8, -6]$  and  $b \in [-8, -4]$   
B.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [3, 8]$  and  $b \in [8, 11]$   
C.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-8, -5]$  and  $b \in [-9, -1]$   
D.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [4, 9]$  and  $b \in [8, 11]$

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

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

$$8x + 5 \geq 10x + 3$$

- A.  $(-\infty, a]$ , where  $a \in [-2.8, 0.7]$   
B.  $[a, \infty)$ , where  $a \in [-0.7, 3.3]$   
C.  $(-\infty, a]$ , where  $a \in [-0.6, 5.4]$   
D.  $[a, \infty)$ , where  $a \in [-1.6, 0.9]$   
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 less 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.

$$\frac{8}{8} - \frac{8}{4}x \geq \frac{-7}{5}x - \frac{6}{9}$$

- A.  $(-\infty, a]$ , where  $a \in [-1.22, 3.78]$   
B.  $(-\infty, a]$ , where  $a \in [-4.78, 0.22]$

- C.  $[a, \infty)$ , where  $a \in [-3.78, 0.22]$
  - D.  $[a, \infty)$ , where  $a \in [1.78, 5.78]$
  - E. None of the above.
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7. Using an interval or intervals, describe all the  $x$ -values within or including a distance of the given values.

No less than 9 units from the number 5.

- A.  $(-\infty, -4) \cup (14, \infty)$
  - B.  $[-4, 14]$
  - C.  $(-4, 14)$
  - D.  $(-\infty, -4] \cup [14, \infty)$
  - 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.

$$-7 + 8x < \frac{66x + 4}{8} \leq 3 + 8x$$

- A.  $[a, b)$ , where  $a \in [29, 34]$  and  $b \in [-11, -3]$
  - B.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [30, 34]$  and  $b \in [-12, -8]$
  - C.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [29, 32]$  and  $b \in [-13, -4]$
  - D.  $(a, b]$ , where  $a \in [30, 31]$  and  $b \in [-12, -7]$
  - 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.

$$-5 + 4x > 7x \text{ or } 9 + 9x < 12x$$

- A.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-6, -2]$  and  $b \in [-0.33, 2.67]$
  - B.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-1.67, 2.33]$  and  $b \in [2.68, 3.81]$
  - C.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-4, -2]$  and  $b \in [1.04, 2.06]$
  - D.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-1.67, 0.33]$  and  $b \in [2, 6]$
  - 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.

$$-9x - 7 > 8x - 10$$

- A.  $(a, \infty)$ , where  $a \in [-0.02, 0.51]$
  - B.  $(-\infty, a)$ , where  $a \in [-0.46, 0.14]$
  - C.  $(-\infty, a)$ , where  $a \in [0.11, 1.05]$
  - D.  $(a, \infty)$ , where  $a \in [-0.47, -0.17]$
  - E. None of the above.
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