

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

No more than 8 units from the number  $-10$ .

- A.  $(-18, -2)$
  - B.  $[-18, -2]$
  - C.  $(-\infty, -18) \cup (-2, \infty)$
  - D.  $(-\infty, -18] \cup [-2, \infty)$
  - 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.

$$\frac{7}{7} + \frac{5}{9}x < \frac{6}{4}x - \frac{3}{6}$$

- A.  $(-\infty, a)$ , where  $a \in [-3.75, -0.75]$
  - B.  $(a, \infty)$ , where  $a \in [-1.5, 2.25]$
  - C.  $(a, \infty)$ , where  $a \in [-3, -0.75]$
  - D.  $(-\infty, a)$ , where  $a \in [-0.75, 4.5]$
  - 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.

$$-7 - 3x \leq \frac{-14x + 8}{6} < -7 - 7x$$

- A.  $[a, b]$ , where  $a \in [7.5, 15]$  and  $b \in [1.5, 5.25]$
- B.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [9, 18.75]$  and  $b \in [0.75, 6.75]$
- C.  $[a, b]$ , where  $a \in [12, 17.25]$  and  $b \in [0.75, 3.75]$
- D.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [9.75, 15.75]$  and  $b \in [-1.5, 6.75]$

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.

Less than 6 units from the number 4.

- A.  $[-2, 10]$
  - B.  $(-\infty, -2) \cup (10, \infty)$
  - C.  $(-2, 10)$
  - D.  $(-\infty, -2] \cup [10, \infty)$
  - 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.

$$\frac{-7}{2} + \frac{3}{5}x \leq \frac{6}{6}x - \frac{5}{7}$$

- A.  $(-\infty, a]$ , where  $a \in [-9, -6]$
  - B.  $(-\infty, a]$ , where  $a \in [5.25, 9.75]$
  - C.  $[a, \infty)$ , where  $a \in [-12.75, -5.25]$
  - D.  $[a, \infty)$ , where  $a \in [6, 12]$
  - 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.

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

- A.  $(-\infty, a]$ , where  $a \in [-0.49, 0.92]$
- B.  $[a, \infty)$ , where  $a \in [-4.6, 0.2]$

- C.  $[a, \infty)$ , where  $a \in [0.2, 1]$
  - D.  $(-\infty, a]$ , where  $a \in [-2.32, 0.17]$
  - 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.

$$-7 + 8x > 9x \text{ or } -7 + 9x < 11x$$

- A.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [0.75, 6.75]$  and  $b \in [4.5, 9]$
  - B.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-10.5, -3]$  and  $b \in [-6, -1.5]$
  - C.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [0, 4.5]$  and  $b \in [5.25, 9.75]$
  - D.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-8.25, -6]$  and  $b \in [-8.25, -3]$
  - 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.

$$-4 - 7x \leq \frac{-14x + 9}{3} < 5 - 6x$$

- A.  $[a, b]$ , where  $a \in [-5.25, -2.25]$  and  $b \in [0.3, 2.62]$
  - B.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [-3.75, -1.5]$  and  $b \in [-0.75, 2.25]$
  - C.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [-6.75, 0.75]$  and  $b \in [0, 4.5]$
  - D.  $(a, b]$ , where  $a \in [-6, 0]$  and  $b \in [0.53, 3.82]$
  - 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.

$$3x + 7 < 4x - 7$$

- A.  $(a, \infty)$ , where  $a \in [-16, -8]$
  - B.  $(-\infty, a)$ , where  $a \in [-15, -5]$
  - C.  $(a, \infty)$ , where  $a \in [10, 17]$
  - D.  $(-\infty, a)$ , where  $a \in [14, 19]$
  - 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.

$$7 + 3x > 6x \text{ or } 4 + 9x < 10x$$

- A.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-5.25, -1.5]$  and  $b \in [-3, 0.75]$
  - B.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-3, 4.5]$  and  $b \in [-1.5, 4.5]$
  - C.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [1.5, 6]$  and  $b \in [0.75, 6]$
  - D.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-8.25, -2.25]$  and  $b \in [-9.75, -0.75]$
  - E.  $(-\infty, \infty)$
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