

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

$$\frac{-6}{8} - \frac{7}{9}x \geq \frac{3}{4}x + \frac{7}{3}$$

- A.  $(-\infty, a]$ , where  $a \in [-4, 2]$
  - B.  $[a, \infty)$ , where  $a \in [0, 3]$
  - C.  $[a, \infty)$ , where  $a \in [-4, 0]$
  - D.  $(-\infty, a]$ , where  $a \in [0, 6]$
  - 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.

$$-9 - 4x \leq \frac{-21x - 4}{6} < -7 - 6x$$

- A.  $(-\infty, a] \cup (b, \infty)$ , where  $a \in [16, 17]$  and  $b \in [2, 6]$
  - B.  $[a, b)$ , where  $a \in [12, 18]$  and  $b \in [1.6, 4.9]$
  - C.  $(-\infty, a) \cup [b, \infty)$ , where  $a \in [15, 21]$  and  $b \in [2, 6]$
  - D.  $(a, b]$ , where  $a \in [13, 18]$  and  $b \in [-1, 4]$
  - 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.

$$-3x - 10 \geq 6x + 10$$

- A.  $(-\infty, a]$ , where  $a \in [-4, -1]$
- B.  $[a, \infty)$ , where  $a \in [0, 4]$
- C.  $(-\infty, a]$ , where  $a \in [-1, 6]$

- D.  $[a, \infty)$ , where  $a \in [-8, 1]$   
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 2 units from the number  $-8$ .

- A.  $(-\infty, -10) \cup (-6, \infty)$   
B.  $(-10, -6)$   
C.  $[-10, -6]$   
D.  $(-\infty, -10] \cup [-6, \infty)$   
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.

$$-8 + 8x > 10x \text{ or } -6 + 3x < 6x$$

- A.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-10, 0]$  and  $b \in [-5, 1]$   
B.  $(-\infty, a) \cup (b, \infty)$ , where  $a \in [-2, 4]$  and  $b \in [3, 11]$   
C.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-2, 6]$  and  $b \in [3, 7]$   
D.  $(-\infty, a] \cup [b, \infty)$ , where  $a \in [-6, -2]$  and  $b \in [-5, 2]$   
E.  $(-\infty, \infty)$
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