

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

$$4x - 6 \leq 9x + 6$$

- A. $[a, \infty)$, where $a \in [2.4, 5.4]$
 - B. $(-\infty, a]$, where $a \in [-3.4, 1.6]$
 - C. $[a, \infty)$, where $a \in [-2.4, -0.4]$
 - D. $(-\infty, a]$, where $a \in [1.4, 4.4]$
 - E. None of the above.
-

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

$$3 + 5x > 7x \text{ or } 9 + 4x < 7x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5, -2]$ and $b \in [-1.5, -0.5]$
 - B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-4, 0]$ and $b \in [-2.5, 0.5]$
 - C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-0.5, 4.5]$ and $b \in [0, 4]$
 - D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-2.5, 4.5]$ and $b \in [3, 7]$
 - E. $(-\infty, \infty)$
-

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

$$-5 + 9x > 11x \text{ or } 3 + 9x < 11x$$

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.01, -2.47]$ and $b \in [1.4, 1.86]$
- B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-1.8, 0.1]$ and $b \in [2.06, 3.51]$
- C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-1.81, -0.61]$ and $b \in [1.91, 2.59]$
- D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-2.7, -2.19]$ and $b \in [1.38, 1.72]$
- E. $(-\infty, \infty)$

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

$$\frac{6}{3} - \frac{10}{6}x \geq \frac{-9}{8}x - \frac{8}{9}$$

- A. $(-\infty, a]$, where $a \in [4.33, 8.33]$
- B. $(-\infty, a]$, where $a \in [-6.33, -4.33]$
- C. $[a, \infty)$, where $a \in [-7.33, -1.33]$
- D. $[a, \infty)$, where $a \in [4.33, 8.33]$
- E. None of the above.

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

$$-3x + 10 \leq 10x - 4$$

- A. $[a, \infty)$, where $a \in [1, 2.7]$
- B. $[a, \infty)$, where $a \in [-3.1, 0.6]$
- C. $(-\infty, a]$, where $a \in [-3.08, -0.08]$
- D. $(-\infty, a]$, where $a \in [-0.92, 5.08]$
- E. None of the above.

-
6. 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 -4 .

- A. $(-\infty, -12) \cup (4, \infty)$
- B. $[-12, 4]$
- C. $(-\infty, -12] \cup [4, \infty)$

- D. $(-12, 4)$
E. None of the above
-

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

$$-7 - 8x < \frac{-36x - 4}{5} \leq 9 - 8x$$

- A. $(a, b]$, where $a \in [3.75, 12.75]$ and $b \in [-15.25, -10.25]$
B. $[a, b)$, where $a \in [7.75, 11.75]$ and $b \in [-16.25, -9.25]$
C. $(-\infty, a] \cup (b, \infty)$, where $a \in [7.75, 8.75]$ and $b \in [-13.25, -9.25]$
D. $(-\infty, a) \cup [b, \infty)$, where $a \in [7.75, 10.75]$ and $b \in [-14.25, -11.25]$
E. None of the above.
-

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

$$-8 - 5x \leq \frac{-42x + 6}{9} < 9 - 9x$$

- A. $(-\infty, a] \cup (b, \infty)$, where $a \in [22, 27]$ and $b \in [-5.92, -0.92]$
B. $(-\infty, a) \cup [b, \infty)$, where $a \in [26, 28]$ and $b \in [-4.92, -0.92]$
C. $(a, b]$, where $a \in [23, 29]$ and $b \in [-3.92, 1.08]$
D. $[a, b)$, where $a \in [25, 32]$ and $b \in [-4.92, -0.92]$
E. None of the above.
-

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

$$\frac{-3}{8} + \frac{6}{3}x < \frac{8}{9}x + \frac{10}{6}$$

- A. (a, ∞) , where $a \in [0.84, 2.84]$

- B. (a, ∞) , where $a \in [-2.84, 0.16]$
 - C. $(-\infty, a)$, where $a \in [-1.84, 1.16]$
 - D. $(-\infty, a)$, where $a \in [-0.16, 6.84]$
 - E. None of the above.
-

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

Less than 7 units from the number 1.

- A. $[6, 8]$
 - B. $(-\infty, 6) \cup (8, \infty)$
 - C. $(6, 8)$
 - D. $(-\infty, 6] \cup [8, \infty)$
 - E. None of the above
-