1. Fill in the blank.

   The set {x | x ≥ − 1.1} written in interval notation is _____.

   The set {x | x ≥ − 1.1} written in interval notation is (1) _____

   (1) ○ (− 1.1,∞).
        ○ [− 1.1,∞).
        ○ (− ∞, − 1.1).
        ○ (− ∞, − 1.1].

2. Use the choices to fill in the blank.

   The set {x | x < − 2.1} written in interval notation is ____.

   The set {x | x < − 2.1} written in interval notation is (1) _____

   (1) ○ $\left(-2.1,\infty\right)$.
        ○ $\left(-\infty,-2.1\right)$.
        ○ $\left[-2.1,\infty\right)$.
        ○ $\left(-\infty,-2.1\right]$.

3. Fill in the blank.

   The set {x | x ≤ 2.7} written in interval notation is _____.

   The set {x | x ≤ 2.7} written in interval notation is (1) _____

   (1) ○ $\left(2.7,\infty\right)$.
        ○ $\left(-\infty,2.7\right]$.
        ○ $\left(-\infty,2.7\right)$.
        ○ $\left[2.7,\infty\right)$.

4. Watch the section lecture video and answer the question listed below. Note: The counter in the lower right corner of the screen displays the Example number.

   Based on the lecture before Example 4, complete the following statement.

   To multiply or divide both sides of an inequality by (1) _____ nonzero negative number(s), one must
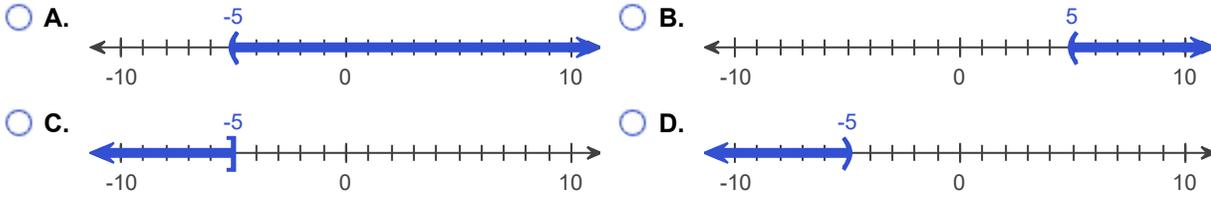
   (2) _____ the direction of the inequality symbol.

   (1) ○ the same   (2) ○ not change
        ○ different   ○ reverse

5. Graph the solution set of the inequality on a number line and then write it in interval notation.
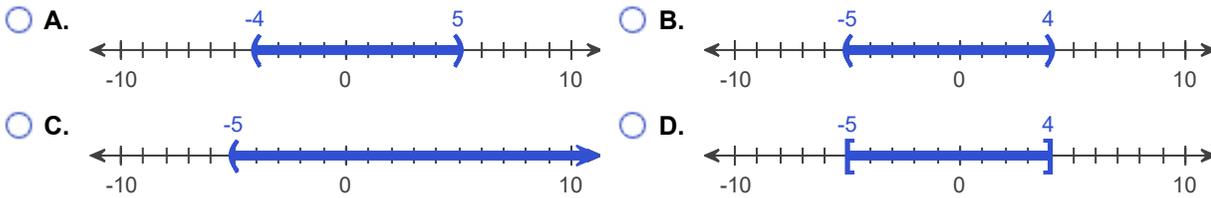
$\{x \mid x < -5\}$

Select the correct graph below.

A.

B.

C.

D.

Now type the solution in interval notation.

_____

6. Graph the inequality on a number line. Then write the solution in interval notation.
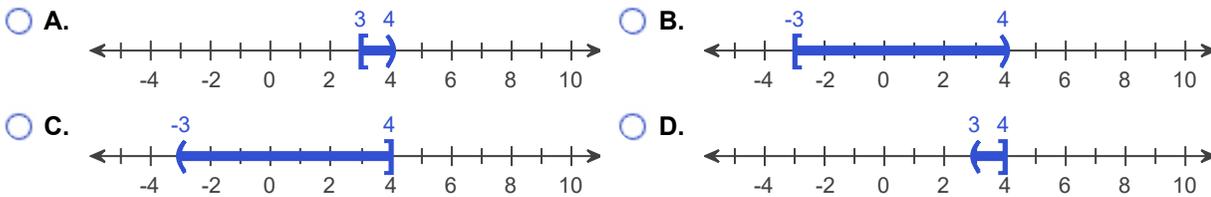
$\{x \mid -5 < x < 4\}$

Select the correct graph below.

A.

B.

C.

D.

Now enter the solution in interval notation.

_____

7. Graph the solution set of the inequality on a number line and then write it in interval notation.

$\{x \mid 4 \geq x > -3\}$

What is the graph of the solution? Choose the correct graph below.
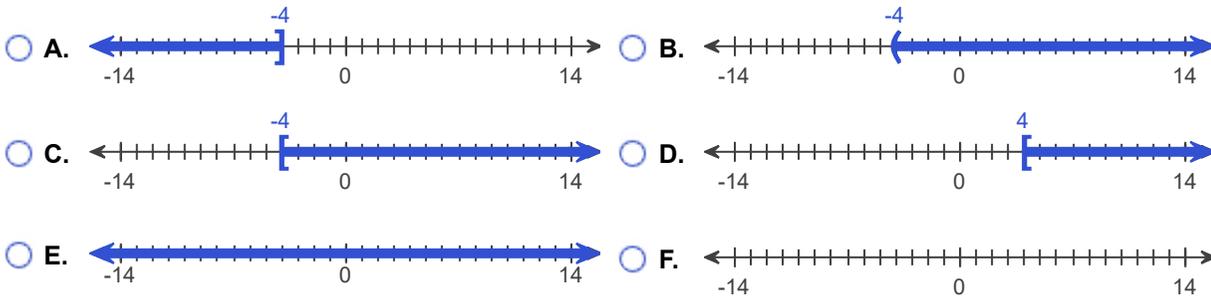
A.

B.

C.

D.

What is the solution set?

The solution set is _____ . (Type your answer in interval notation.)

8. Solve the following inequality. Graph the solution set and write it in interval notation.

$$x - 4 \geq -8$$
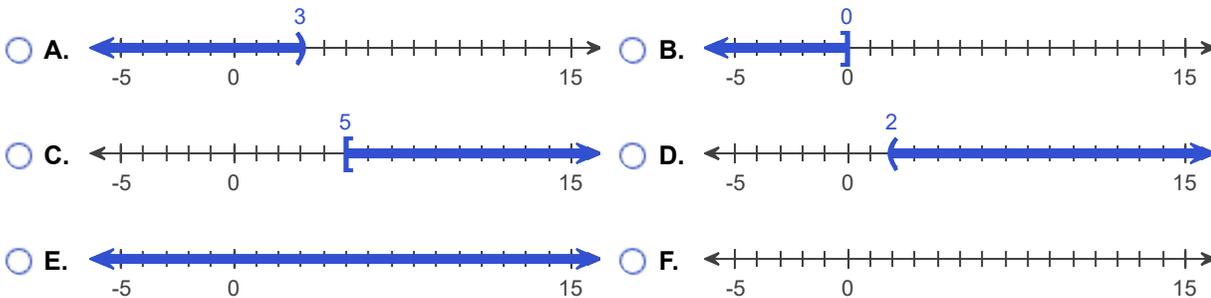
Select the correct graph below.

A.   B.

C.   D.

E.   F.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution is _____.
   (Type your answer in interval notation.)
B. The solution is ∅.

---

9. Solve the following inequality. Graph the solution set and write it in interval notation.
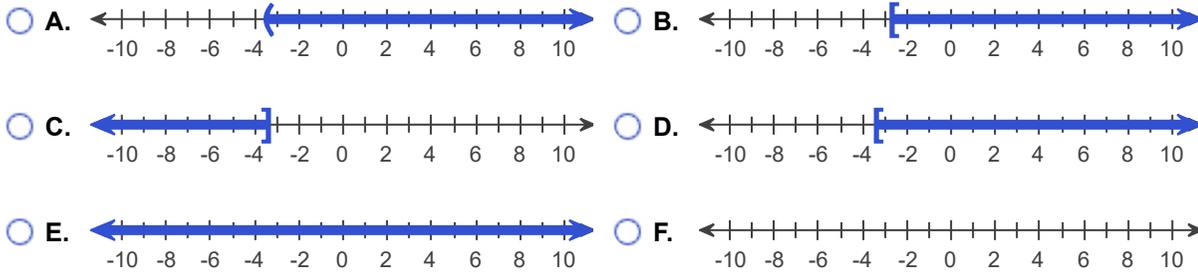
$$15x < 14x + 3$$

Choose the graph of the solution set.

A.   B.

C.   D.

E.   F.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution set is _____.
   (Type your answer in interval notation.)
B. The solution set is ∅.

10. Solve the following inequality. Graph the solution set and write it in interval notation.

$$\frac{8}{9}x \geq -3$$
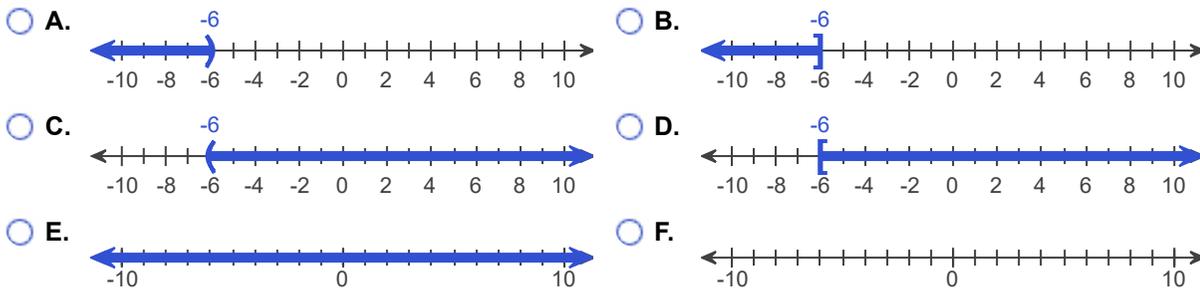
Select the correct graph below.

A.

B.

C.

D.

E.

F.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution is _____.
(Use integers or fractions for any numbers in the expression. Type your answer in interval notation.)

B. The solution is Ø.

---

11. Solve the following inequality. Graph the solution set and then write it in interval notation.

$$-4x \geq 24$$

What is the graph of the solution?

A.

B.

C.

D.

E.

F.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution set is _____.
(Type your answer in interval notation.)

B. The solution set is Ø.

12. Solve the following inequality. Write the solution set using interval notation.

$21 + 7x \geq 3x - 7$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ **A.** The solution set is _____ .
(Type your answer in interval notation. Use integers or fractions for any numbers in the expression. Simplify your answer.)

○ **B.** The solution set is ∅.

---

13. Solve the following inequality. Write the solution set in interval notation.

$5(x - 6) < 3(2x - 1)$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ **A.** The solution set is _____ .
(Simplify your answer. Type your answer in interval notation.).)

○ **B.** The solution set is ∅.

---

14. Solve the following inequality. Write the solution set in interval notation.

$-3(2x - 1) < -2[5 + 4(x + 2)]$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ **A.** The solution set is _____ .
(Type your answer in interval notation. Use integers or fractions for any numbers in the expression.)

○ **B.** The solution set is ∅.

---

15. Solve the following inequality. Write the solution set using interval notation.

$8 - (6x - 3) \geq -7(x + 1) - 7$

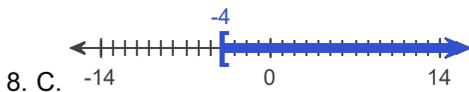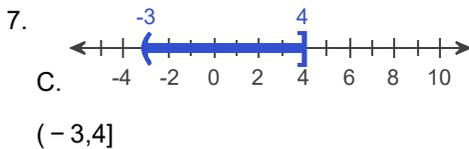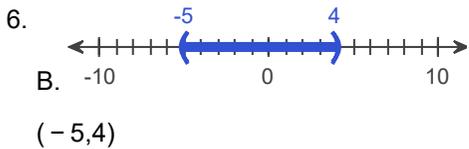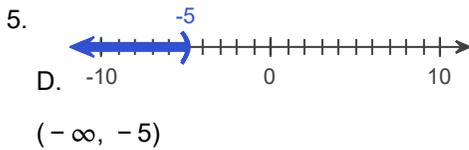Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

○ **A.** The solution set is _____ .
(Type your answer in interval notation. Use integers or fractions for any numbers in the expression.)
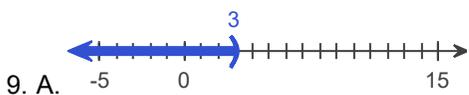
○ **B.** The solution set is ∅.

1. (1) $[-1.1, \infty)$.
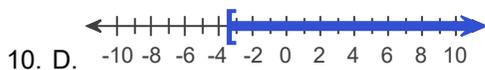
2. (1) $(-\infty, -2.1)$.

3. (1) $(-\infty, 2.7]$.

4. (1) the same

   (2) reverse

5.

   D. -10   0   10

   $(-\infty, -5)$

6.

   B. -10   0   10

   $(-5, 4)$

7.

   C. -4 -2 0 2 4 6 8 10

   $(-3, 4]$

8. C. -14   0   14

   A. The solution is   __$[-4, \infty)$__   .(Type your answer in interval notation.)

9. A. -5   0   15

   A. The solution set is   __$(-\infty, 3)$__   .(Type your answer in interval notation.)

10. D. -10 -8 -6 -4 -2 0 2 4 6 8 10

    A. The solution is $\left[-\dfrac{27}{8}, \infty\right)$.

    (Use integers or fractions for any numbers in the expression. Type your answer in interval notation.)

11. B.

-6

$\xleftarrow{\hspace{2cm}}$ -10 -8 -6 -4 -2 0 2 4 6 8 10
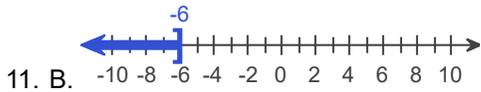
A. The solution set is $\underline{\quad (-\infty, -6] \quad}$. (Type your answer in interval notation.)

---

12. A. The solution set is $\underline{\quad [-7, \infty) \quad}$.

(Type your answer in interval notation. Use integers or fractions for any numbers in the expression. Simplify your answer.)

---

13. A. The solution set is $\underline{\quad (-27, \infty) \quad}$.(Simplify your answer. Type your answer in interval notation.).)

---

14. A. The solution set is $\underline{\quad \left(-\infty, -\dfrac{29}{2}\right) \quad}$.

(Type your answer in interval notation. Use integers or fractions for any numbers in the expression.)

---

15. A. The solution set is $\underline{\quad [-25, \infty) \quad}$.

(Type your answer in interval notation. Use integers or fractions for any numbers in the expression.)