

Student: _____
Date: _____

Instructor: Andreas Lazari
Course: Math1111-Summer2018

Assignment: Section 1.7 Homework

1. Express the interval in set-builder notation and graph the interval on a number line.

$(-4, 8]$

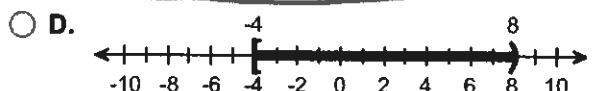
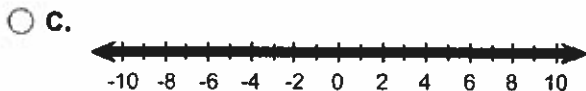
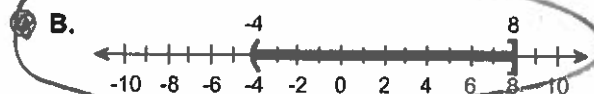
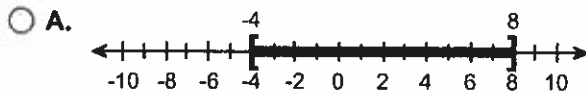
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution set in set-builder notation is $\{x \mid -4 < x \leq 8\}$.
(Type an inequality or a compound inequality.)

B. The solution set is all real numbers.

C. There is no solution.

Choose the correct graph below.



2. Express the interval in set-builder notation and graph the interval on a number line.

$[6, 8]$

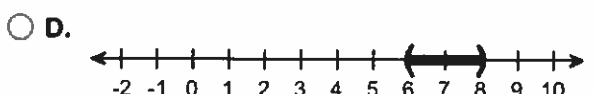
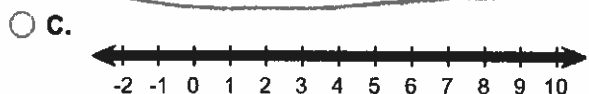
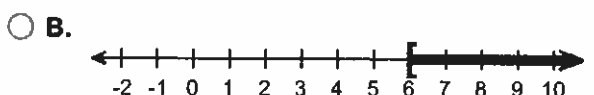
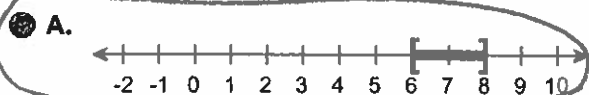
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution set in set-builder notation is $\{x \mid 6 \leq x \leq 8\}$.
(Type an inequality or a compound inequality.)

B. The solution set is all real numbers.

C. There is no solution.

Choose the correct graph below.



3. Express the interval in set-builder notation and graph the interval on a number line.

$(-\infty, -5)$

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

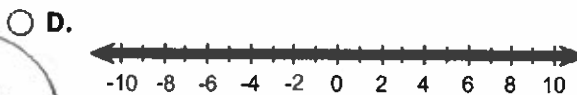
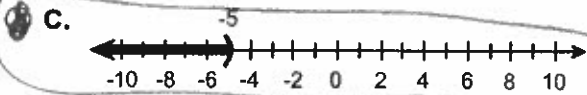
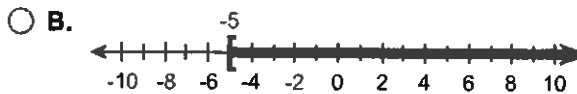
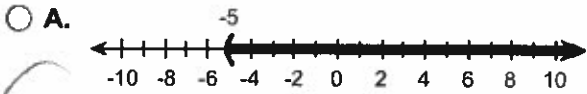
A. The solution set in set-builder notation is $\{x \mid -\infty < x < -5\}$.
(Type an inequality or a compound inequality.)

OR $x < -5$ } the software will accept both.

B. The solution set is all real numbers.

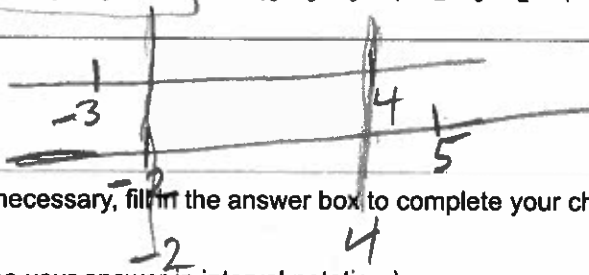
C. There is no solution.

Choose the correct graph below.



4. Use graphs to find the set.

$(-3, 4) \cap [-2, 5]$



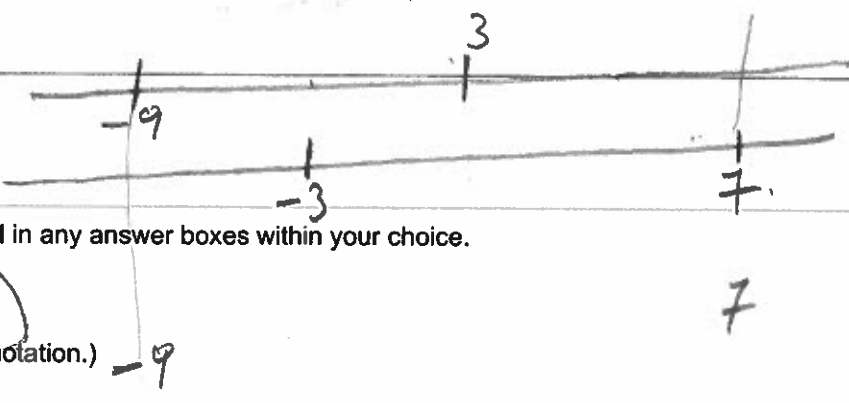
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The set is $[-2, 4)$. (Type your answer in interval notation.)

B. The set is the empty set.

5. Use graphs to find the set.

$(-9, 3) \cup [-3, 7]$



Select the correct choice below and fill in any answer boxes within your choice.

A. The set is $[-9, 7]$. (Type your answer in interval notation.)

B. The answer is the empty set.

6. Use interval notation to express the solution set and graph the solution set on a number line.

$$2x + 4 < 10 \Rightarrow 2x < 10 - 4 \Rightarrow 2x < 6 \Rightarrow x < 3$$

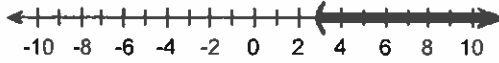
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

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

B. The solution set is \emptyset .

Choose the correct graph below.

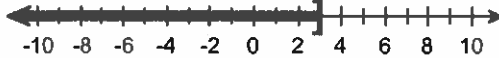
A.



B.



C.



D. The solution set is \emptyset .

7. Use interval notation to express the solution set and graph the solution set on a number line.

$$-6x \geq 48 \Rightarrow \frac{-6x}{-6} \leq \frac{48}{-6} \Rightarrow x \leq -8$$

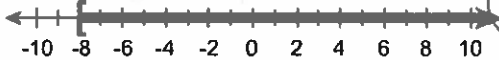
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution set is $(-\infty, -8]$. (Type your answer using interval notation.)

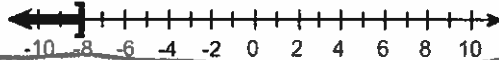
B. The solution set is \emptyset .

Choose the correct graph of the inequality.

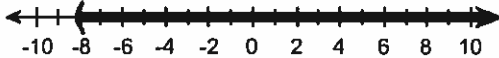
A.



B.



C.



D. The solution set is \emptyset .

8. Solve the linear inequality. When the solution is other than \emptyset , use interval notation to express the solution set and graph the solution set on a number line.

$$5(x+1)+3 \geq 4x+12 \Rightarrow$$

$$5x+5+3 \geq 4x+12 \Rightarrow 5x+8 \geq 4x+12 \Rightarrow 5x-4x \geq 12-8 \Rightarrow x \geq 4$$

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

- A. The solution is $[4, \infty)$. (Type the solution using interval notation.)
- B. The solution set is \emptyset .

Choose the correct graph for the solution set found above.

- A.
- B.
- C.
- D.
- E.
- F. The solution set is \emptyset .

9. Use interval notation to express the solution set and graph the solution set on a number line.

$$\frac{x}{3} - \frac{1}{6} \leq \frac{x}{4} + 1 \Rightarrow$$

$$\frac{4x}{12} - \frac{2}{12} \leq \frac{3x}{12} + \frac{12}{12} \Rightarrow 4x - 2 \leq 3x + 12 \Rightarrow 4x - 3x \leq 12 + 2 \Rightarrow x \leq 14$$

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

- A. The solution set is $(-\infty, 14]$. (Type your answer using interval notation.)
- B. The solution set is \emptyset .

What is the graph of the solution?

- A.
- B.
- C.
- D. The solution set is \emptyset .

10. Use interval notation to express the solution set and graph the solution set on a number line.

$$\frac{x-16}{6} \geq \frac{x-8}{9} + \frac{1}{18} \Rightarrow \frac{3(x-16)}{18} \geq \frac{2(x-8)}{18} + \frac{1}{18} \Rightarrow 3x-48 \geq 2x-16+1 \Rightarrow 3x-2x \geq 48-15$$

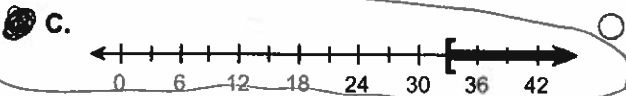
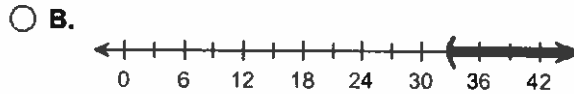
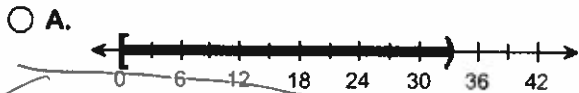
$$\Rightarrow x \geq 33$$

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

A. The solution set in interval notation is $[33, \infty)$.
(Type your answer using interval notation.)

B. The solution set is \emptyset .

Choose the correct graph for the solution set found above.



D. The solution set is \emptyset .

11. Solve the linear inequality. When the solution is other than \emptyset , use interval notation to express the solution set and graph the solution set on a number line.

$$\Rightarrow 6x-6-3x-3 \geq 3x-6 \Rightarrow 3x-9 \geq 3x-6 \Rightarrow 0=3$$

No solution.

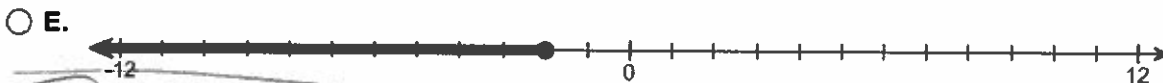
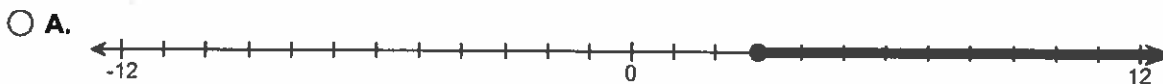
$$6(x-1) - 3(x+1) \geq 3x - 6$$

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 \emptyset .

Choose the correct graph for the solution set found above.



F. The solution set is \emptyset .

12. Solve the compound inequality. $-7 < 3x + 2 \leq 2 \Rightarrow -9 < 3x \leq 0 \Rightarrow -3 < x \leq 0$
 $-7 < 3x + 2 \leq 2$ $(-3, 0]$

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

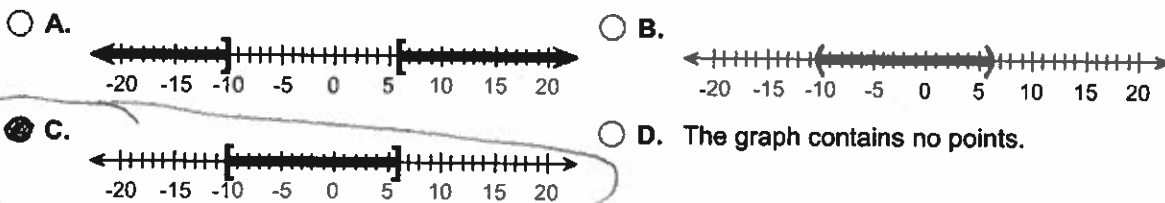
- A. The solution set is $(-3, 0]$. (Type your answer in interval notation.)
 B. The solution set is the empty set.

13. Solve the inequality, then graph the solution set. $|x + 2| \leq 8 \Rightarrow -8 < x + 2 \leq 8 \Rightarrow -10 \leq x \leq 6$
 $|x + 2| \leq 8$ $[-10, 6]$

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

- A. The solution set is $[-10, 6]$. (Type your answer in interval notation.)
 B. The solution set is \emptyset .

Choose the correct graph below.



14. Solve the absolute value inequality. $|2x - 2| > 6 \Rightarrow 2x - 2 < -6 \Rightarrow 2x < -4 \Rightarrow x < -2$
 $|2x - 2| > 6$ or $2x - 2 > 6 \Rightarrow 2x > 8 \Rightarrow x > 4$ $(-\infty, -2) \cup (4, \infty)$

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

- A. The solution set is $(-\infty, -2) \cup (4, \infty)$. (Type your answer in interval notation.)
 B. The solution set is the empty set.

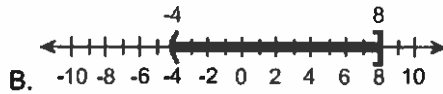
15. Solve the absolute value inequality. $-2|6 - x| < -8 \Rightarrow |6 - x| > 4 \Rightarrow 6 - x < -4 \Rightarrow 6 + 4 < x$
 $-2|6 - x| < -8$ $\Rightarrow 10 < x$
 $x > 10$

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

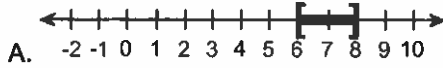
- A. The solution set in interval notation is $(-\infty, 2) \cup (10, \infty)$.
 B. The solution set is \emptyset .

or $6 - x > 4$
 $6 - 4 > x$
 $2 > x$
 $x < 2$
 $(-\infty, 2) \cup (10, \infty)$

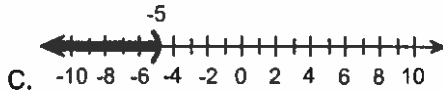
1. A. The solution set in set-builder notation is $\{x \mid -4 < x \leq 8\}$. (Type an inequality or a compound inequality.)



2. A. The solution set in set-builder notation is $\{x \mid 6 \leq x \leq 8\}$. (Type an inequality or a compound inequality.)



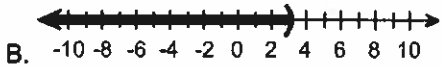
3. A. The solution set in set-builder notation is $\{x \mid x < -5\}$. (Type an inequality or a compound inequality.)



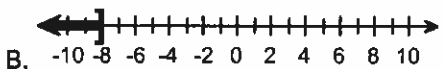
4. A. The set is $[-2, 4)$. (Type your answer in interval notation.)

5. A. The set is $(-9, 7]$. (Type your answer in interval notation.)

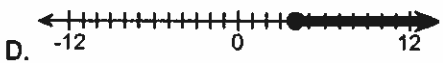
6. A. The solution set is $(-\infty, 3)$. (Type your answer using interval notation.)



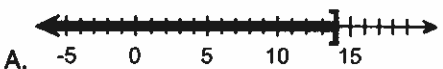
7. A. The solution set is $(-\infty, -8]$. (Type your answer using interval notation.)



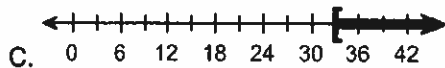
8. A. The solution is $[4, \infty)$. (Type the solution using interval notation.)



9. A. The solution set is $(-\infty, 14]$. (Type your answer using interval notation.)



10. A. The solution set in interval notation is [33,∞) .(Type your answer using interval notation.)

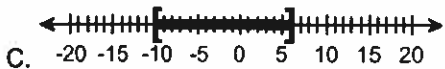


11. B. The solution set is \emptyset .

F. The solution set is \emptyset .

12. A. The solution set is (-3,0] . (Type your answer in interval notation.)

13. A. The solution set is [-10,6] . (Type your answer in interval notation.)



14. A. The solution set is (-∞, -2)U(4,∞) . (Type your answer in interval notation.)

15. A. The solution set in interval notation is (-∞,2)U(10,∞) .
