Student: Cole Lamers **Date:** 06/09/19	**Instructor:** Kelly Galarneau **Course:** CA&T Internet (70263) Galarneau	**Assignment:** 1.5 Inequalities

1. Fill in the blank with the correct inequality symbol.

If $x < 3$, then $x - 3$ ___ 0.

If $x < 3$, then $x - 3$ < 0.

2. Fill in the blank with the correct inequality symbol.

If $x \geq 12$, then $x - 12$ ___ 0.

If $x \geq 12$, then $x - 12$ ≥ 0.

3. Fill in the blank with the correct inequality symbol using the rules for producing equivalent inequalities.

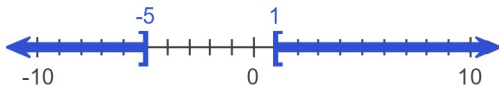
If $-5x \leq 20$, then x _ −4.

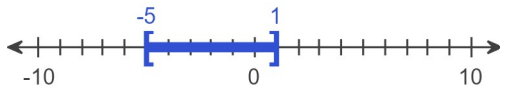
If $-5x \leq 20$, then x ≥ −4.

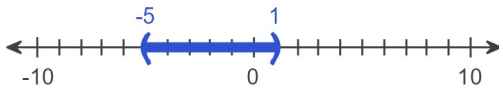
4. Graph the solution set of the inequality and write it in interval notation.

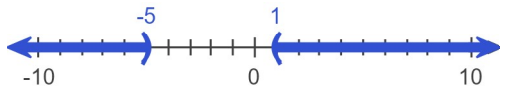
$-5 < x < 1$

Select the correct graph of the inequality.

A. 

B. 

C. 

D. 

What is the solution in interval notation?

$(-5,1)$

(Type your answer in interval notation.)

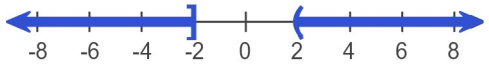
5. Write the inequality in interval notation and graph the interval.

$-2 < x \leq 2$

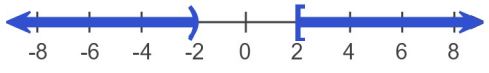
What is the interval? $(-2,2]$

Which graph is correct?

A. 

B. 

C. 

D. 

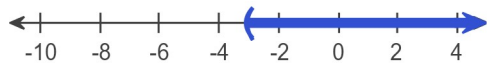
6. Write the inequality in interval notation and graph.

$x \geq -3$

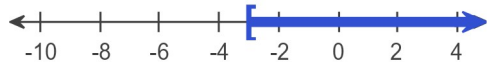
The interval is $[-3, \infty)$.

Choose the correct graph below.

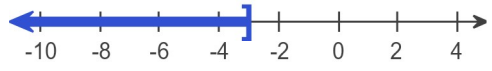
A.



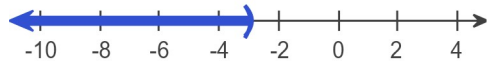
B.



C.



D.



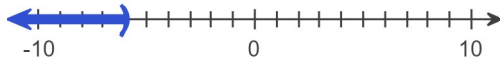
7. Graph the solution set of the inequality and write it in interval notation.

$-3x > 18$

Choose the correct graph of the solution set of the inequality.

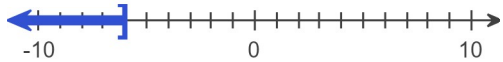
A.

B.



C.

D.



What is the solution in interval notation?

$(-\infty, -6)$

(Type your answer in interval notation.)

8. Solve the inequality. Write the solution set in interval notation and graph the solution set.

$2 - x \leq 8$

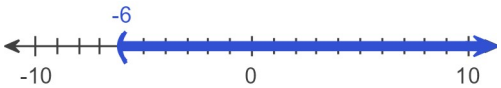
Select the correct choice below and, if necessary, fill in the answer box within your choice.

A. The solution set is $[-6, \infty)$.
(Simplify your answer. Type your answer in interval notation.)

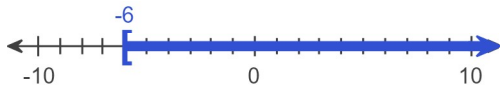
B. The solution is the empty set.

Choose the correct graph of the solution set below.

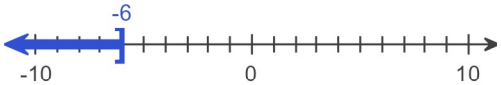
A.



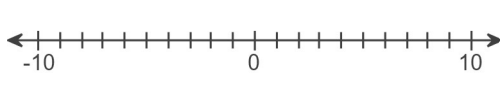
B.



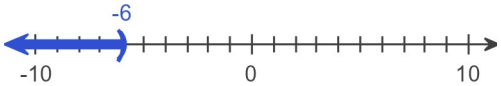
C.



D.



E.



9. Solve the inequality. Write the solution set in interval notation, and graph it.

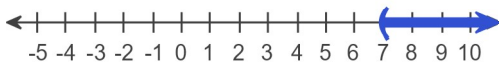
$-8z + 48 > -8$

The solution set in interval form is $(-\infty, 7)$.

Choose the graph that best represents the inequality.

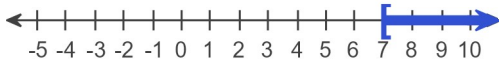
A.

B.



C.

D.



10. Watch the video and then solve the problem given below.

Click here to watch the video.[1]

Solve $2(x-3) - 3(x+2) \le 3x + 8$.

The solution set is $[-5, \infty)$.
(Simplify your answer. Type your answer in interval notation.)

1: http://mediaplayer.pearsoncmg.com/assets/q_SKBe8dCYpy45jhqf6LVu_UAMMMgu5x

11. Solve the inequality. Write the solution in interval notation and graph the solution set.

$4(x+3) < 3x + 8$

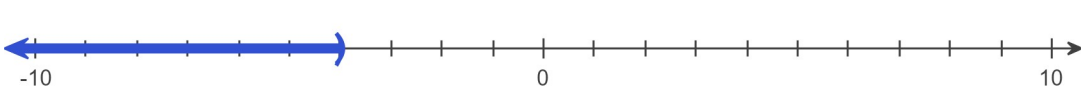
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution set is $(-\infty, -4)$.
(Type your answer in interval notation. Type an integer or a simplified fraction.)

B. The solution set is empty.

Choose the graph that looks like the graph for this solution set.

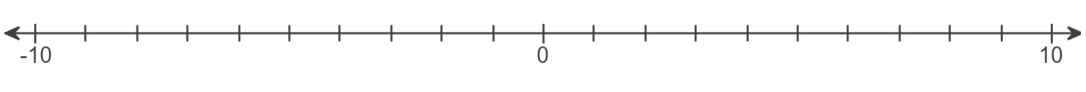
A.



B.

C.

D.

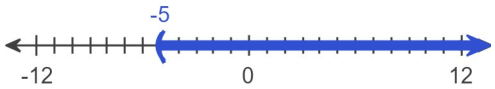


12. Solve the inequality. Graph the solution set and write it in interval notation.

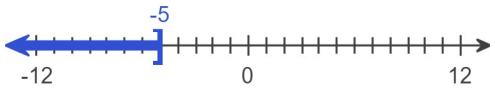
$7 + 10x < 9x + 2$

Select the correct graph below.

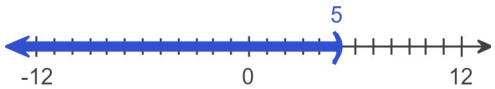
A.



B.



C.



D.

Now enter the solution in interval notation.

$(-\infty, -5)$

13. Solve the inequality. Write the solution in interval notation and graph the solution set.

$3(x + 2) + 7 \geq 3(x + 3) - 5$

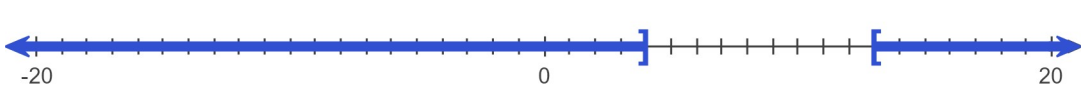
Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. The solution set is empty.

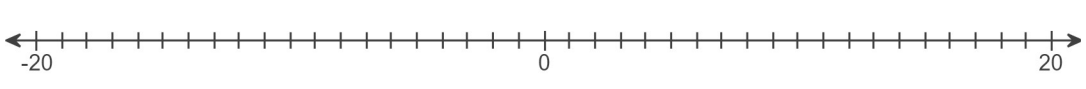
B. The solution set is $(-\infty, \infty)$.
(Type your answer in interval notation. Type an integer or a simplified fraction.)

Choose the correct graph of the solution set below.

A.

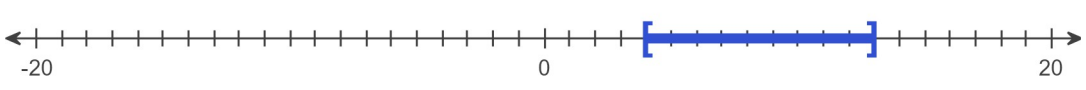


B.



C.

D.



14. Solve the rational inequality.

$$\frac{x-1}{2} \geq \frac{x}{3} + 5$$

What is the solution set?

$\{[33, \infty)\}$
(Type your answer in interval notation. Type an integer or a simplified fraction.)

15. Watch the video and then solve the problem given below.

Click here to watch the video.[2]

Solve $5(x+2) \le 3(x-8)$ or $2x+9 < 4x-11$.

The solution set is $(-\infty, -17] \cup (10, \infty)$.
(Simplify your answer. Type your answer in interval notation.)

2: http://mediaplayer.pearsoncmg.com/assets/WwnYEeiAfSd57VfIUQaCmta5ZZVfpVqQ

16. Solve the compound *or* inequality.

$3x+7 < 4$ or $5+x > 6$

Choose the correct interval below.

- **A.** $(-1,1)$
- **B.** $(-\infty, -1) \cup (6, \infty)$
- **C.** $(-\infty, -1) \cup (1, \infty)$ ✔
- **D.** $(-1,6)$

17. Solve the compound *or* inequality.

$\frac{3x+5}{4} \ge x+5$ or $\frac{x}{3} - 4 > \frac{x}{4}$

The solution set is $(-\infty, -15] \cup (48, \infty)$.
(Simplify your answer. Type your answer in interval notation.)

18. Watch the video and then solve the problem given below.

Click here to watch the video.[3]

Solve $3(x-7) - 6 \le 9$ and $20 > 4(3-x)$.

The solution set is $(-2,12]$.
(Simplify your answer. Type your answer in interval notation.)

3: http://mediaplayer.pearsoncmg.com/assets/Bgk_v2rqffi5E2R9J0OY6cabh6tJWgta

19. Solve the compound *and* inequality.

$2(x+1)+7 \ge 1$ and $2(1-x) > -6$

Choose the correct interval below.

- **A.** $(-\infty, 4]$
- **B.** $[-4,4)$ ✔
- **C.** $(-4, \infty)$
- **D.** $(-6,4)$

20. Solve the compound *and* inequality.

$4(x+1)-6>7$ and $2(3x+1)+1<15$

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. Use integers or fractions for any numbers in the expression.)
- **B.** The solution set is $\varnothing$.

21. Solve the compound inequality.

$-7 \le x-3 < 3$

The solution is $[-4,6)$. (Type your answer in interval notation.)

22. Use the test-point method to solve the polynomial inequality.

$x^2+2x-15 \le 0$

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

- **A.** The solution set is $[-5,3]$.
  (Type your answer in interval notation. Use integers or fractions for any numbers in the expression.)
- **B.** The solution is $\varnothing$.

23. Use the test-point method to solve the polynomial inequality.

$(x+5)(x+2)(x-2) \ge 0$

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

- **A.** The solution set is $[-5,-2] \cup [2,\infty)$.
  (Type your answer in interval notation.)
- **B.** The solution is $\varnothing$.

24. Use the test-point method to solve the polynomial inequality.

$x^3-2x^2-8x>0$

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

- **A.** The solution set is $(-2,0) \cup (4,\infty)$.
  (Type your answer in interval notation. Use integers or fractions for any numbers in the expression.)
- **B.** The solution is $\varnothing$.

25. Use the test-point method to solve the polynomial inequality.

$x^2 + 12x < -36$

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 $\varnothing$.

26. Use the test-point method to solve the polynomial inequality.

$x^3 - 4x^2 \geq 0$

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

- **A.** The solution set is $\{0\} \cup [4, \infty)$.
  (Type your answer in interval notation.)
- **B.** The solution is $\varnothing$.

27. Use the test-point method to solve the polynomial inequality.

$x^2 \geq 9$

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

- **A.** The solution set is $(-\infty, -3] \cup [3, \infty)$.
  (Type your answer in interval notation.)
- **B.** The solution set is $\varnothing$.

28. Watch the video and then solve the problem given below.

Click here to watch the video.[4]

Solve $\dfrac{x-2}{x^2-4x-21} \geq 0$.

The solution set is $(-3, 2] \cup (7, \infty)$.
(Simplify your answer. Type your answer in interval notation.)

4: http://mediaplayer.pearsoncmg.com/assets/NkoLwCiSj4U8P0SxoJoaxQc___Km1bBv

29. Solve the rational inequality $\dfrac{x+1}{x-3} < 0$

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

- **A.** The solution set is $(-1, 3)$.
  (Type your answer in interval notation. Use integers or fractions for any numbers in the expression.)
- **B.** The solution is the empty set, $\varnothing$.

30. Solve the rational inequality $\frac{(x-3)(x+2)}{(x-4)(x+6)} \geq 0$.

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

- **A.** The solution set is $(-\infty,-6)\cup[-2,3]\cup(4,\infty)$.
  (Type your answer in interval notation.)
- **B.** The solution is the empty set, $\varnothing$.

31. Solve the rational inequality $\frac{x^2-16}{x^2-64} \leq 0$.

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

- **A.** The solution set is $(-8,-4]\cup[4,8)$.
  (Type your answer in interval notation.)
- **B.** The solution is the empty set, $\varnothing$.