

## Introduction to Inequalities: Classwork

1. Name two values of  $x$  that would make each inequality true.

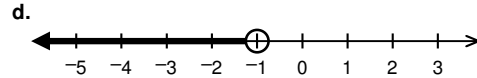
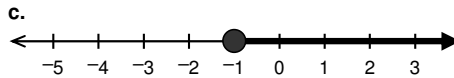
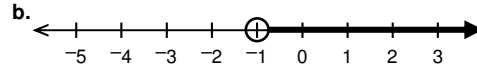
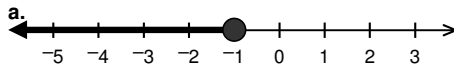
a.  $x > 1$

b.  $x \leq 1$

c.  $x \geq -4$

d.  $x < -100$

2. Write **two** inequalities for each of the following graphs.



3. Name two values of  $x$  that would make each inequality true.

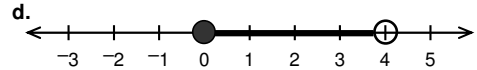
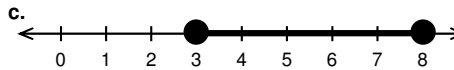
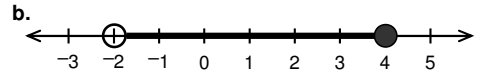
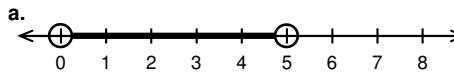
a.  $3 < x < 9$

b.  $2 \leq x \leq 4$

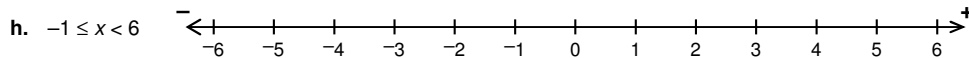
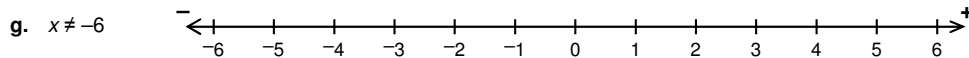
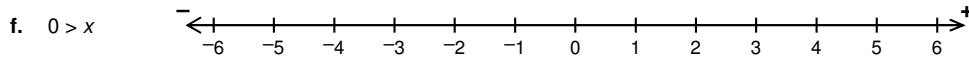
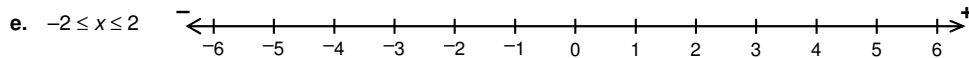
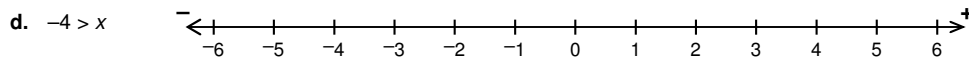
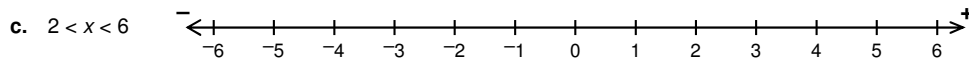
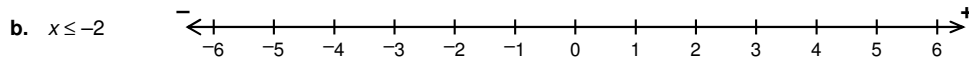
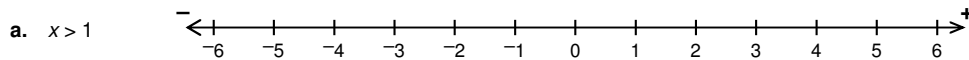
c.  $-9 \leq x < -1$

d.  $-4 < x \leq 4$

4. Write a combined inequality for each of the following graphs.

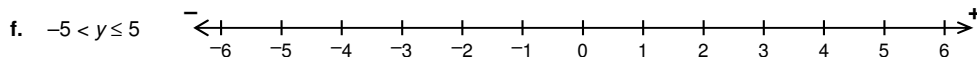
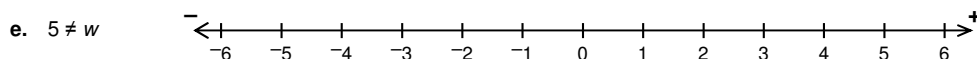
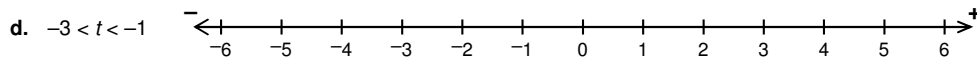
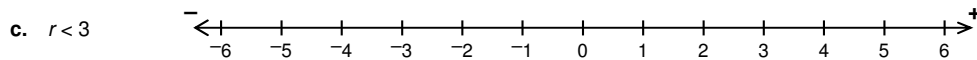
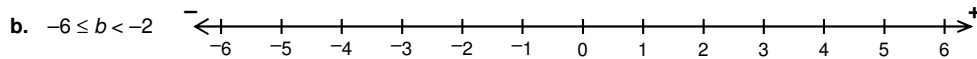
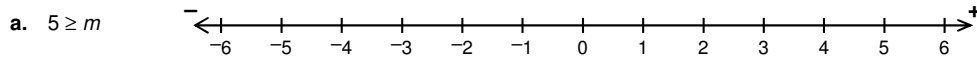


5. Graph the following inequalities to represent all of the possible values of  $x$ .



6. **Multiple Choice.** On the freeway, cars can drive up to 60 miles per hour. Let  $x$  stand for the legal speed of a car driving on the freeway. Which inequality represents the situation? Circle one.
- A.  $0 < x < 60$                       B.  $0 > x \geq 60$                       C.  $0 < x \leq 60$
7. Write an inequality to describe the interval referred to in each statement, then graph the inequality on a number line.
- a. Kim has more money than Kourtney. Kourtney currently has \$10. Let  $x$  represent the amount of money that Kim has.
- b. The measure of an obtuse angle is between  $90^\circ$  and  $180^\circ$ .  
Let  $x$  stand for the angle of an obtuse angle.
- c. In a school zone, cars can go no more than 20 miles per hour. Let  $x$  stand for the legal speed of a car driving in a school zone.
- d. The temperature of sea water may range from  $-2^\circ\text{C}$  to  $30^\circ\text{C}$ .  
Let  $x$  stand for the temperature of some sea water.

8. Graph the following inequalities to represent all possible values of the variable.



9. Insert either  $<$ ,  $>$ , or  $=$  to make each statement true.

a.  $7 - 5$      $5 - 7$                       b.  $-0.5$      $-0.75$                       c.  $4x^3 - 22$      $4x^3 - 5$

10. Name two values of  $x$  that would make each inequality true.

a.  $x + 1 > 2$                       b.  $x + 3 \leq -5$                       c.  $x - 2 \geq -2$                       d.  $x - 6 < -100$

e.  $5x > 50$                       f.  $-5x \leq 50$                       g.  $5x + 1 \geq -10$                       h.  $-8x - 3 < -100$

## Introduction to Inequalities: Homework

11. **Multiple Choice.** Which inequality is equivalent to  $x \leq 15$

- A.  $15 \geq x$       B.  $15 \leq x$       C.  $15 > x$       D.  $15 < x$

12. **Multiple Choice.** Which inequality is equivalent to  $11 < x$

- A.  $x \geq 11$       B.  $x \leq 11$       C.  $x > 11$       D.  $x < 11$

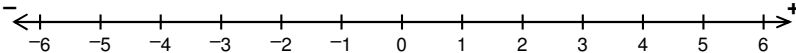
13. Name two values of  $x$  that would make each inequality true.

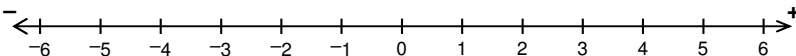
- a.  $x > 5$       b.  $x \leq -5$

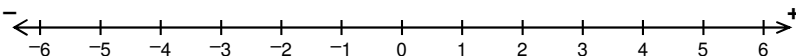
14. Name two values of  $x$  that would make each inequality true.

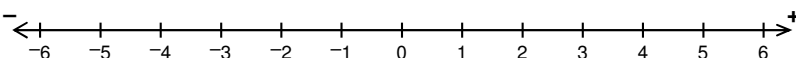
- a.  $-1 \leq x < 4$       b.  $6 < x$

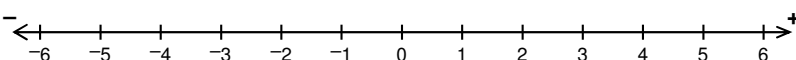
15. Graph each of the inequalities below.

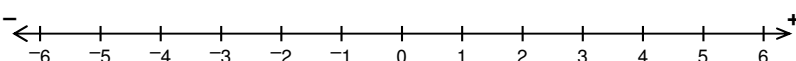
a.  $x > -2$  

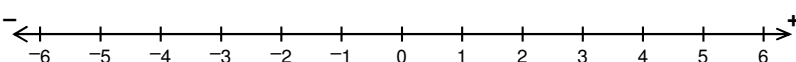
b.  $x \leq 1$  

c.  $x < -3$  

d.  $4 < x$  

e.  $x \neq -5$  

f.  $-1 \leq x \leq 4$  

g.  $-4 < x \leq -3$  

h.  $-6 < x < 1$  