Unit 3.2 Introduction to Inequalities and Notation

1. Graph each set on the number line
   a. {x | x is a whole number less than 3}

   b. {x | x is a prime number less than 20}

   c. {x | $-4 < x < 0$, x is a whole number}

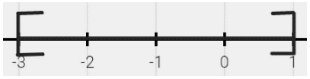
   d. {x | $x < -2$ or $x > 6$}

2. Use Set Builder Notation to indicate each set of numbers described

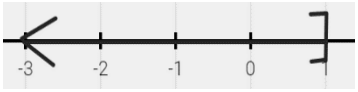
   a. The set of all real numbers between 3 and 5, including 3

   b. The set of all real numbers greater than or equal to -2.5

3. For each graph, write the values in set builder notation to describe the numbers contained, interval notation to represent the graph and describe the type of interval that is illustrated.

a. 

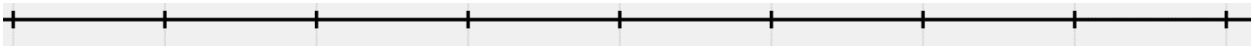
b. 

c. 

d. 

4. Graph each interval on a real number line and describe what type of interval (assume x is a real number)

a. $x > 4$



b. $-2 \leq x \leq 0$

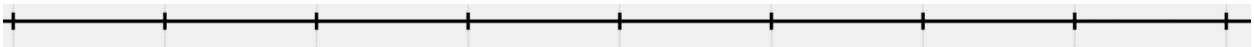
5. Solve each inequality and graph it on a number line. Write each solution in interval notation (assume x is a real number)

   a. $14 - 5x < 4$

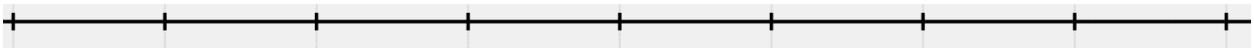
   b. $4 - 2x < 5 + x$

   c. $11x + 8 - 5x \geq 2x - (4 - x)$

   d. $-4 < x + 5$ and $x + 5 < 6$

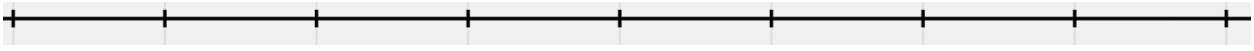


e. $-6 > x - 3$ or $x - 3 \geq 9$



f. $-1 < x + 5 < 6$

g. $1 \leq \frac{2}{3}x - 1 \leq 9$



h. $-1.5 < 2x + 4.1 < 3.5$