

NAME: \_\_\_\_\_ Score \_\_\_\_\_/10

Please **print** your name

1. What is the solution set for  $|3x - 9| = -5$ ?  $\emptyset$
2. The solution set for  $|x - 5| = 8$  is  $\{-3, 13\}$ . What is the solution set for  $|x - 5| < 8$ ? Write your answer with interval notation. **The solution set for  $|x - 5| < 8$  is the interval  $(-3, 13)$ .**
3. List all the subsets of the set  $\{d, k\}$ . **Write them as sets.**

 **$\emptyset$   $\{d\}$   $\{k\}$   $\{d, k\}$** 

2. The solution set for  $12x - 7 = 14x + 11$  is  $\{-9\}$ .  
Sketch the graph of  $12x - 7 = 14x + 11$



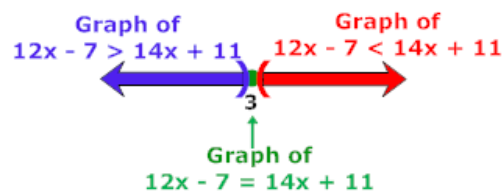
The corresponding two inequalities are:

$$12x - 7 < 14x + 11 \text{ and } 12x - 7 > 14x + 11$$

To determine the solutions sets and graphs of the corresponding inequalities we will

Test 0 in  $12x - 7 < 14x + 11$  to obtain  $-7 < 11$  which is **TRUE**.Therefore  $(-9, \infty)$  is the solution set for the inequality  $12x - 7 < 14x + 11$ and  $(-\infty, -9)$  is the solution set for the inequality  $12x - 7 > 14x + 11$ .

Sketch and label the graph of the equation and both inequalities on the same picture.



3. Complete the statement of The Law of Trichotomy  
If  $a, b$ , are real numbers then exactly one of the following is true:

- i.  $a < b$
- ii.  $a = b$
- iii.  $a > b$