

## Concepts to Know

**Set Building Notation.** – Used to signify that there are too many solutions to list, but all those solutions will share some notable characteristic, e.g.  $\{x \mid x > 5\}$

**Changing the direction of an inequality sign.** – This is done anytime multiplication or division by a negative number occurs to both sides of the inequality.

**$J \neq 11$ .** – Restricted value - means that any number other “and” statements than that particular one can be used.

### The “and ” compound inequality.

- The solutions will represent the numbers that solve **dual arguments**.
- Method: graph one statement **above** the number line, then the other **below** the number line, The **final answer** will actually be where **both shadings exist concurrently**.
- Usually has a solution that graphs as dumbbell shape..
- On occasion will answer as  $\{ \}$ ,
- Statement that **can be crunched** together using the concept of transitivity.

### The “or ” compound inequality.

- The solutions will represent the numbers that solve **one, the other, or possibly both arguments**.
- Method: Zombie graphing, just graph each statement **never use the eraser**.
- Usually has a solution that graphs as diverging arrows.
- On occasion will have an answer as **R**,
- Statement that cannot be crunched together.

1.  $5w > 4(2w - 3)$  and  $5(w - 3) + 2 < 7$

1. { \_\_\_\_\_ and \_\_\_\_\_ }

1. \_\_\_\_\_

2.  $3f > 2f - 7$  and  $9f - 2 < 7$

2. { \_\_\_\_\_ and \_\_\_\_\_ }

2. \_\_\_\_\_

3.  $3k + 1 > -14$  and  $k \neq 5$

3. { \_\_\_\_\_ and \_\_\_\_\_ }

3. \_\_\_\_\_

4.  $9 - 2x \leq 12x - 5 < 3x + 31$

4. { \_\_\_\_\_ and \_\_\_\_\_ }

4. \_\_\_\_\_

5.  $2h + 5 \geq 2(3h + 7)$  or  $3h + 5 \leq 2h + 9$

5. { \_\_\_\_\_ or \_\_\_\_\_ }

5. \_\_\_\_\_

6.  $4t + 8 \geq t + 6$  or  $7t - 14 \geq 2t - 4$

6. { \_\_\_\_\_ or \_\_\_\_\_ }

6. \_\_\_\_\_