Homework Week 4 – Due on Friday Name: _____

"Try to be a rainbow in someone's cloud." **-** Maya Angelou Block: ____

Tuesday

Evaluate the function for the given value of x.

$f(x) = \begin{cases} 3, & \text{if } x \le 0 \\ 2, & \text{if } x > 0 \end{cases}$ $g(x) = \begin{cases} x + 5, & \text{if } x \le 3 \\ 2x - 1, & \text{if } x > 3 \end{cases}$ $h(x) = \begin{cases} \frac{1}{2}x - 4, & \text{if } x \le -2 \\ 3 - 2x, & \text{if } x > -2 \end{cases}$

1. $f(2)$ **2.** $f(-4)$ **3.** $f(0)$ **4.** $f\left(\frac{1}{2}\right)$

5. $g(7)$ **6.** $g(0)$ **7.** $g(-1)$ **8.** $g(3)$

9. $h(-4)$ **10.** $h(-2)$ **11.** $h(-1)$ **12.** $h(6)$

Evaluate each composite value

1. If $f(x) = 3x - 5$ and $g(x) = x^2$, find $(f(g(3))$

2. If $f(x) = -9x - 9$ and $g(x) = \sqrt{x - 9}$, find $(f(g(10))$

3. If $f(x) = -4x + 2$ and $g(x) = \sqrt{x - 8}$, find $(f(g(12))$

4. If $f(x) = -3x + 4$ and $g(x) = x^2$, find $(g(f(-2))$

5. If $f(x) = -2x + 1$ and $g(x) = \sqrt{x^2 - 5}$, find $(g(f(2))$

Find each composite.

6. Given $f(x) = -9x + 3$ and $g(x) = x^4$, find $(f(g(x))$

7. Given $f(x) = 2x - 5$ and $g(x) = x + 2$, find $(f(g(x))$

8. Given $f(x) = x^2 + 7$ and $g(x) = x - 3$, find $(f(g(x))$

1. $|x-4|+6>12$

2. $5|x-1|-3\leq 42$

3. $|2x-6|>12$

4. $5-|x-6|=-10$

5. $2|x-5|-5=-21$

6. $-2|7-3x|-6=-14$