Name: _____ Date: _____ **Unit 3 Assessments**

Explore!

- Think
  - Write (your ideas and questions) –
    - Pair (discuss ideas/questions/etc.)
      - Share as a class discussion!

1 The domain of a function w(x) is $(-7,\infty)$ and the range is $(3,\infty)$. How will the domain and/or range change given each of the following scenarios? WHY?

a. w(x + 1)

left 1 → Domain moves left 1 → $(-8,\infty)$

b. w(x-1)

Right 1 → Domain moves right 1 → $(-6,\infty)$

c. –w(x)

reflection over x-axis → Range becomes $(-\infty,-3)$

d. w(-x)

reflects over y-axis → Domain becomes $(-\infty,7)$

Direction ≠ Sign change

2 Determine the domain and range of the function, $y(x) = \sqrt{-x-3}$.
Then sketch its graph according to the domain and range.

Domain: $-x-3 \geq 0$, $-x \geq 3$, $x \leq -3$ → $(-\infty,-3]$

Range: $[0,\infty)$

3 Explain why the order of transformations is essential. Describe when the order of transformations is essential to keep in mind, and which transformation should be performed first.

If a reflection over y-axis is present, you must do the translation first ☺

Practice Makes Perfect

*1*The domain of a function r(x) is $(-\infty,9)$ and the range is $(-1,\infty)$. How will the domain and/or range change given each of the following scenarios? WHY?

a. –r(x)

b. r(-x)

c. r(x) – 4

d. r(x) - 4

2 Determine the domain and range of the function, $f(x) = \sqrt{-x+2}+1$.
Then sketch its graph according to the domain and range.

3 Circle the functions for which the translations must occur before the reflections if graphed using the transformation rules.

p(x) = -|x – 2| + 3 k(x) = (-x + 5)^2 – 3 m(x) = |-x – 5| + 1

w(x) = √(-x) + 5 b(x) = (-x + 1)^3 – 8 r(x) = -|-x – 9| + 10