Unit 2: Functions and Their Inverses Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Math 3 Study Guide

1. Identify the following from the graph shown below.
	1. Domain:
	2. Range:
	3. X-intercept(s):
	4. Y-intercept(s):
	5. Intervals increasing:
	6. Intervals decreasing:
2. State the parent function and the transformations for each of the following:

* 1. f(x) = x2 – 1

PF:

Trans:

* 1. g(x) = 2|x-1|

PF:

Trans:

* 1. h(x) = |x+5|-2

PF:

Trans:

* 1. $j\left(x\right)=-3\sqrt{x}$

PF:

Trans:

1. Write the equation of the function with the given transformations:
	1. Square root: left 3, down 2 3a. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. Absolute value: reflection over y-axis, compression of ½ 3b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. Quadratic: reflection over x-axis, right 9 3c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. Cubic: down ¼ 3d. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Directions:** Write a piecewise function for the following graphs.



1.
2.
3.

**Directions:** Carefully graph each of the following. Identify whether or not the graph is a function. Then, evaluate the graph at any specified domain value. You may use your calculators to help you graph, but you must sketch it carefully on the coordinate plane!



1.
2.
3.



**Directions:** Graph the inverse of the following graphs on the same coordinate plane.



1.
2.
3.

**Directions:** Find the inverse of the following functions. Is the function 1-1?

1. f(x) = 2x – 3
2. f(x) $=\frac{x-5}{x}$
3. f(x) = 5x2 – 4