Math 151 - Quiz 5

September 30, 2015

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (3 points) Find the inverse of the function $g(x) = 5(x+2)$.

$y = 5(x+2)$

$\frac{y}{5} = x + 2$

$\frac{y}{5} - 2 = x$

$y = \frac{x}{5} - 2$

$\boxed{g^{-1}(x) = \frac{x}{5} - 2, \quad -\infty < x < \infty}$

2. (3 points) Some values of the function f are given in the table below. Assuming that f has an inverse function, use the data in the table to make a table of values for f^{-1}.

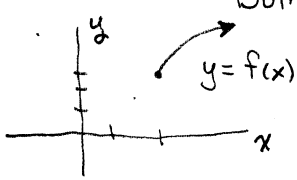
x	1	2	3	4	5
$f(x)$	-2	3	8	10	12

x	$f^{-1}(x)$
-2	1
3	2
8	3
10	4
12	5

$y = f(x) \Leftrightarrow x = f^{-1}(y)$

3. (2 points) If $f(x) = \sqrt{x-2} + 3$, what is the domain of $f^{-1}(x)$.

Domain of f^{-1} = Range of f



$= \boxed{[3, \infty)}$

4. (2 points) List the zeros and their multiplicities: $p(x) = (2x+1)^2(x-5)^3$

$2x + 1 = 0$ $\Downarrow$ $x = -\frac{1}{2}$ Multiplicity 2

$x - 5 = 0$ $\Downarrow$ $x = 5$ Multiplicity 3