

Week 3 Math 1508 Worksheet #2

1. [sec 1.7 – sec 1.9] True or False [You must justify your answer with an explanation.]
 - a. The graph of $y = f(-x)$ is a reflection of the graph of $y = f(x)$ about the x-axis.
 - b. The graph of $f(x) = |x| + 6$ and $f(x) = |-x| + 6$ are identical.
 - c. If f is an odd function, then f^{-1} exists.
 - d. If the inverse function of f exists and the graph of f has a y-intercept, then the y-intercept of f is an x-intercept of f^{-1} .

2. [sec 1.8] Find two functions f and g such that $(f \circ g)(x) = h(x)$.
 - a. $h(x) = \frac{1}{(x+4)^2}$
 - b. $h(x) = \sqrt{x^2 - 12}$

3. [sec 1.7 – 1.9] Find the domain for the following functions.
 - a. $f(x) = \frac{1}{8-4x}$
 - b. $f(x) = \sqrt{27 - 3x}$
 - c. $f(x) = |6x - 8|$
 - d. $f(x) = 3x^2 + 3x - 5$
 - e. $f(x) = \frac{1}{\sqrt{5+15x}}$

4. [sec 1.9] For the function $f(x) = \frac{x-9}{3x+3}$
 - a. Find the inverse function of f .
 - b. Graph both f and f^{-1} on the same set of coordinate axes.
 - c. State the domains and ranges of f and f^{-1} .

