

Math 1450, Honor Calculus Practice 1, Fall 2015.

August 31, 2016

PSID: \_\_\_\_\_ Name: \_\_\_\_\_

1.  $f(x) = x + 1, g(x) = x^2 + 5x + 6$ . Find  $g \circ f$  and its domain.
2. Let  $f(x) = x + 3$  and  $h(x) = 4x - 5$ . Find function  $g$  such that  $g \circ f = h$ .
3. Suppose  $f$  and  $g$  are odd functions. Are  $f + g$  and  $fg$  odd? Explain it!
4. Find the limit  $\lim_{x \rightarrow 0^+} \left( \frac{1}{x} - \frac{1}{|x|} \right)$  if it exists. If not, explain why?