

# Reading Assignment for Section 1.3

MATH 130: Calculus I, Section 4

Spring Semester 2017

**Follow the general guidelines for the Reading Assignment (the salmon colored handout).**

Be sure to include and label all four standard parts 1,2,3,4 of the Reading Assignment in what you hand in. Be sure to **staple** together pages if you have more than one, and include your **name** at the top of the page. Neatness is appreciated!!!

**Due:** at the beginning of class on Monday, January 23rd

Read:

Section 1.3, pages 26-35: Inverse, Exponential, and Logarithmic Functions

Notes:

In mathematics we like to be able to undo everything we do. In terms of functions, this means we are interested in inverse functions. Here we review the definition of inverse functions and when we have them. In this section we also review two types of transcendental functions, exponential and logarithmic. What is their relationship to each other?

**Remember that your answers should include complete sentences for every question.**

Reading Questions for part (1), Response:

- a) If  $g$  is the inverse of  $f$ , what is the inverse of  $g$ ? Why? (Hint: Use the definition of inverse to explain your answer.)
- b) (i) What is the relationship between the domain of a function  $f$  and its inverse?  
(ii) If we know that  $f(3) = 7$ , what else do we know?
- c) Do all functions have inverses? If so, why? If not, which ones do? Explain why your response (yes or no) makes sense.
- d) The book says that logarithmic functions are the *inverse* functions of exponential functions. Explain what that really means.
- e) The notation for the inverse of a function  $f$  is confusing. Why? Be careful with this!!!

Remember parts 2-4 on the salmon handout!