Math 4303 **FUNDAMENTALS OF MATH** Fall 2012
Dr. Duval **Homework**
Thursday, September 20

Follow the separate general guidelines for Parts A,B,C. Be sure to include and label *all four* standard parts (a), (b), (c), (d) of Part A in what you hand in.

Some types of functions

Section 3.1.3

A: Reading questions. Due by 3pm, Wed., 26 Sep.

1. Give an example of a function h with domain

$$D = \{\text{orange, blue, white, silver, gold, chartreuse}\}$$

that is one-to-one, and a function k with the same domain that is **not** one-to-one. Use the definition of one-to-one function to briefly explain why your answer is correct.

2. What condition is necessary for a function to have an inverse? Does every function have an inverse? Which function in the previous question has an inverse, and which one does not? Show the inverse of the function that has an inverse.
3. How can we use composition to check if g is the inverse of f? Apply this to the function in the first reading question that has an inverse.
4. How can we think of subtraction as a function? Is subtraction closed on the integers? Why or why not?

B: Warmup exercises. For you to present in class. Due by end of class Thu., 27 Sep.

3.1.3 Problems: 2, 4, 8, 9.