Math 3325 **PRINCIPLES OF MATH** Fall 2017
Dr. Duval **Homework 8**
due Thursday, November 2

1. Let c and d be real numbers. Let V be the relation

$$V = \{(x, y) \in \mathbb{R} \times \mathbb{R} \colon y = cx + d\}$$

Prove that if $V \circ V = I_{\mathbb{R}}$, then: $c = -1$; or $c = 1$ and $d = 0$.

2. Let A be the set of functions that map real numbers to real numbers. Prove that the relation S on the A given by

$$f \; S \; g \quad \text{iff} \quad f(5) - f(3) = g(5) - g(3)$$

is an equivalence relation.