

## 1. ASSIGNMENT 3

1.1. **Problem 1.** Prove that the set

$$\{x : 0 < x < 1\}$$

does not have a largest element.

1.2. **Problem 2.** If

$$0 \leq a < b \quad \text{and} \quad 0 \leq c < d \quad \text{then} \quad ac < bd$$

1.3. **Problem 3.** If  $a \leq b$  and  $c \geq 0$ , prove that

$$a \cdot c \leq b \cdot c$$

1.4. **Problem 4.** Prove that if

$$|x| \leq 2 \quad \text{then} \quad |x^2 - 4| \leq 4|x - 2|$$