

# Math 208 Homework 1.

Problems from P.M. Fitzpatrick, *Advanced Calculus*.

**Section 1.1, pp 11,12:** Problems: 3, 13, 16, 17, 20(a,b).

**Section 1.2, p.16:** Problems: 4, 3, 9.

and the following problems:

**Problem 1.** Show that if  $a > 1$ , then  $a^2 > a$ .

**Problem 2.** Show that

$$1 + 2 + 2^2 + 2^3 + \cdots + 2^{n-1} = 2^n - 1, \quad \forall n \in \mathbb{N}.$$