

# Extra Credit Assignment 1

Due Thursday September 3, 11:59 PM

The 3-simplex is the subset

$$\Delta^3 = \{(x_0, x_1, x_2, x_3) \mid x_i \geq 0 \text{ for all } i \text{ and } \sum_{i=0}^3 x_i = 1.\} \subset \mathbb{R}^4$$

Explain why  $\Delta^3$  is a tetrahedron. You should be clear, concise, and convincing.

As a starting point, you may want to think about how to actually define what a tetrahedron is.