

## Extra Credit Assignment 6

Due Thursday, October 8, 11:59 PM

Suppose that  $X$  is a topological space for which every subset of  $X$  is open, closed, or both.

If  $X$  is finite, must  $X$  be a poset? That is, must there be some poset structure on  $X$  so that the Alexandroff topology of this poset structure is equal to the topology of  $X$ ?

What if  $X$  is not finite?