

18.905 Problem Set 1

Due Wednesday, September 13 in class

1. Prove that a CW complex X is a disjoint union of connected components, and these connected components are also path components.
2. Suppose that $f : K \rightarrow X$ is a map from a compact space K to a CW complex X . Show that the image $f(K)$ intersects the interior of only finitely many cells of X . (Hint: Suppose that you have a sequence of points in X that each lie in the interiors of different cells.) You can assume that K is first countable and Hausdorff if you want.
3. Hatcher, exercise 11 on page 19.
4. Hatcher, exercise 14 on page 19.