1056-55-923 **Nicholas A Scoville*** (nicholas.scoville@dartmouth.edu), 6188 Kemeny Hall, Dartmouth College Mathematics Dept., Hanover, NH 03755. *A Metric for Homotopy Types.* Preliminary report.

Let C be the collection of CW complexes under the equivalence relation of homotopy type, and let * be the equivalence class of contractible spaces. We will motivate the definition of the distance d between two objects in the collection C. This distance is based on the classical notion of the cone length of a space. We will then show that for any positive real number r, there exists a space X(r) such that the distance between X(r) and * is equal to r. The proof utilizes a number theory result concerning Egyptian Fractions. This shows that all positive real values are realized in the metric space (C,d). (Received September 18, 2009)