

Combinatorial Analysis 21-301: Fall 2003

Homework.

HW1 due Monday 9/8/2003

Q1: A *graceful labelling* of a tree T on n vertices is a mapping from $V(T) \rightarrow [n]$ so that the numbers $|f(x) - f(y)|$, computed across edges, are all different. Show that a path has a graceful labelling. (It is conjectured that all trees have graceful labellings, but you are not expected to settle this conjecture).

Q2: A tree T has exactly one vertex of degree i for each $2 \leq i \leq m$ and all other vertices are of degree one. How many vertices does T have? Justify your answer, (of course).