1023-28-1390 **Mohammad Javaheri*** (javaheri@uoregon.edu), Fenton Hall, Mathematics Department, University of Oregon, Eugene, OR 97403. *A Tale of Two Integrals on Graphs and Manifolds.* Preliminary report.

We define two invariants on graphs that represent graph properties in depth. Among our results, we show that if G is a connected multigraph with e edges and no vertex of degree 1, and if $f : G \to \mathbb{R}$ is L^1-integrable with $\int_G f \; d\mu_G = 1$ then for any $0 < r \leq 1/e$ there exists a connected subset U of size r such that $\int_U f \; d\mu_G = r$. (Received September 25, 2006)