1056-57-148     **Allison Henrich**, **Noël MacNaughton**, **Sneha Narayan**, **Oliver Pechenik** and **Jennifer Townsend\*** (`jtownsen@scrippscollege.edu`), 1030 Columbia Ave, Claremont, CA 91711. *Classical and Virtual Pseudodiagram Theory and New Bounds on the Unknotting Numbers and Genus of Knots.*

A pseudodiagram is a diagram of a knot with some crossing information missing. We review and expand the theory of pseudodiagrams introduced by R. Hanaki in 2009. We then extend this theory to the realm of virtual knots, a generalization of knots. In particular, we address the issue of how much crossing information must be known to conclude that a diagram is a diagram of the unknot. We also consider how much information is necessary to identify a non-trivial knot, a classical knot, or a non-classical knot. We then apply pseudodiagram theory to develop new upper bounds on unknotting number, virtual unknotting number, and genus. (Received August 04, 2009)