

Week 47 (8/4/03)

### Sliding ladder

A ladder of length  $\ell$  and uniform mass density stands on a frictionless floor and leans against a frictionless wall. It is initially held motionless, with its bottom end an infinitesimal distance from the wall. It is then released, whereupon the bottom end slides away from the wall, and the top end slides down the wall. When it loses contact with the wall, what is the horizontal component of the velocity of the center of mass?

