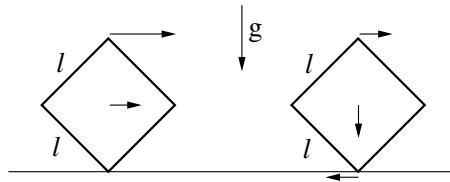


[mex72] Cube standing on edge

A homogeneous cube of side  $\ell$  is initially in a position of unstable equilibrium with one edge on a horizontal plane. The cube then falls on one side. Calculate the angular velocity  $\omega$  of the cube when the face strikes the plane, (a) if the lowest edge remains fixed, (b) if the lowest edge can slide on the plane without friction. Express the results as functions of  $g$  and  $\ell$ .



**Solution:**