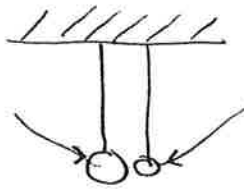


EX 23.9

(Inelastic collisions)



2) If $v_{\text{final}} = \frac{15}{16} v_{\text{initial}}$, for glass spheres.

then $KE_{\text{final}} = \left(\frac{15}{16}\right)^2 KE_{\text{initial}}$, for each sphere, since $KE \propto v^2$

For wool spheres, likewise,

$$KE_{\text{final}} = \left(\frac{5}{9}\right)^2 KE_{\text{initial}}$$

So the kinetic energy is not conserved during these collisions. It can only be conserved if energy is not lost to any other form, such as sound, heat, etc. It can be increased during a collision if, for example, an explosion during the collision converts chemical to kinetic energy.