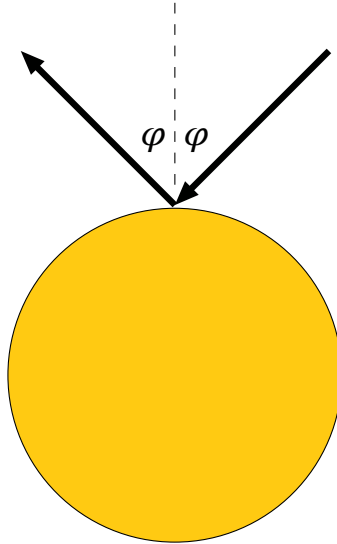


your name(s) \_\_\_\_\_

*Physics 321 Quiz #10 - Friday, March 22 2019*

Consider a point particle elastically scattering off a hard spherical ball of radius  $R$ . For such an elastic scattering, the incoming and outgoing angles,  $\phi$ , relative to the direction pointing to the contact point, are equal. This is illustrated in the picture.



- a. (10 pts) For an impact parameter  $b$  find the scattering angle  $\theta_s$ .
- b. (10 pts) Find the differential cross section,  $d\sigma/d\Omega$ , as a function of  $\theta_s$ .