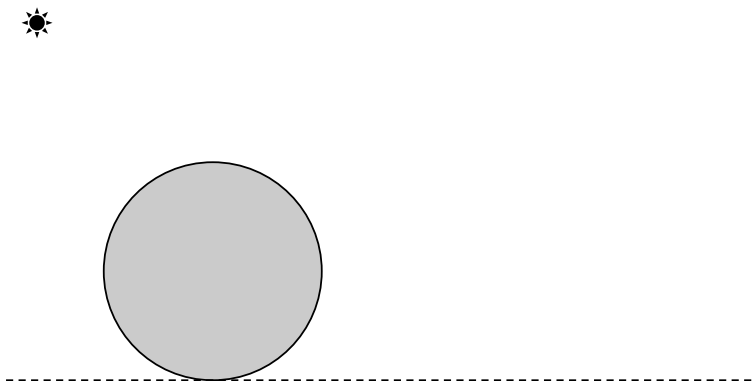


*Lighting Practice Problems*

1. This diagram shows the side view of a light source and a sphere, both in the same vertical plane. Denote the portion of the dotted line (floor) that will be in shadow due to the sphere.



2. You are given 7 different points on the surface of a sphere. First you compute the unit normal vector at each point, then you compute the dot product of the normal vector with the unit light vector at each point.
- (a) For a white light, draw a line from each dot product to the corresponding shading color.

point on the sphere	$\vec{P}_1$	$\vec{P}_2$	$\vec{P}_3$	$\vec{P}_4$	$\vec{P}_5$	$\vec{P}_6$	$\vec{P}_7$
dot product	-1	-0.8	-0.2	0	0.2	0.8	1

black     
  white     
  dark gray     
  light gray

- (b) In the picture (side view) of a sphere and a light source below, label 5 points that could be  $\vec{P}_1, \dots, \vec{P}_5$  (i.e. those points would give roughly the dot products shown above).

