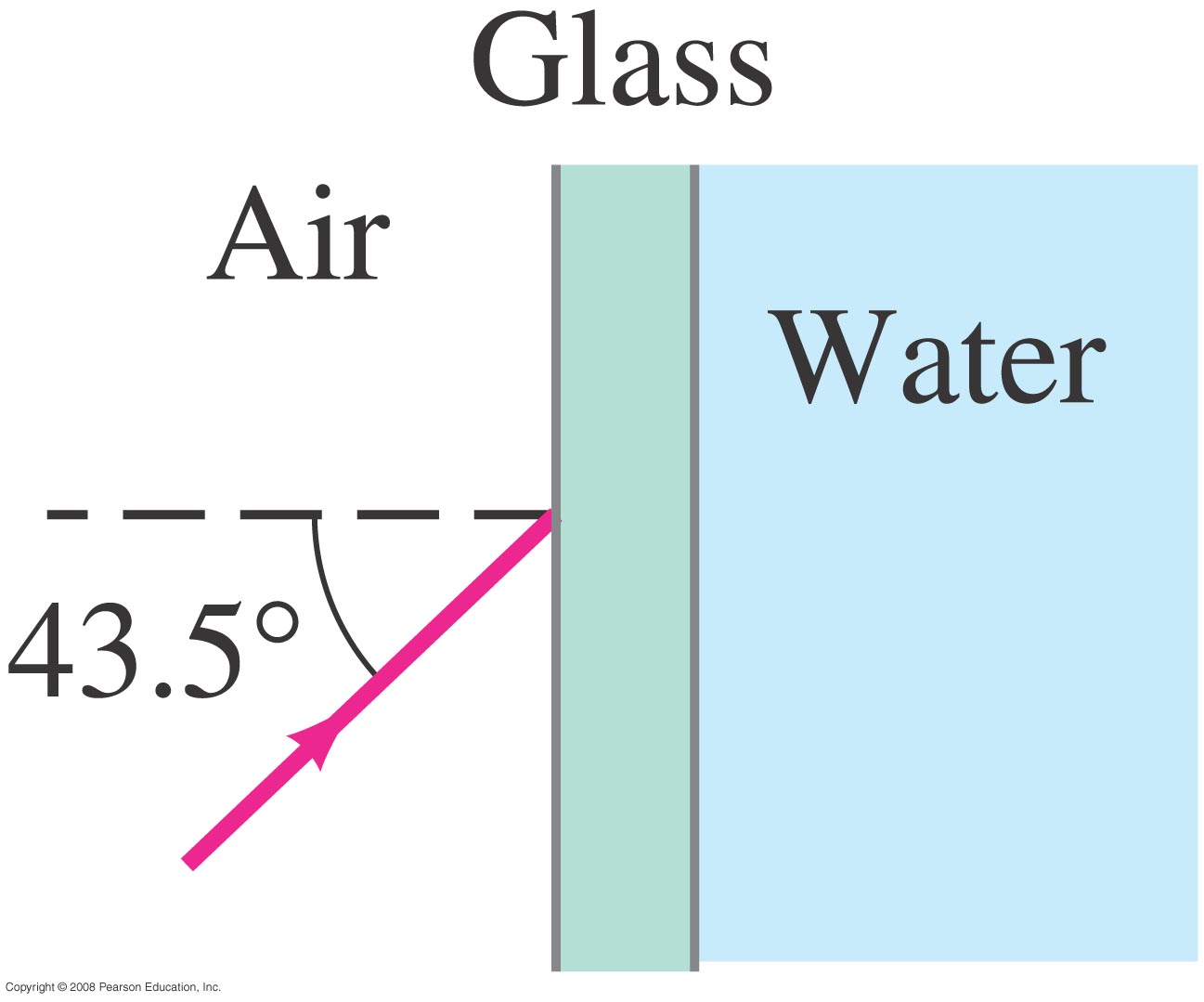
PY212

**Discussion Worksheet 11**

Please work with your partners on the following exercises.

You may find the following useful: index of refraction for air = 1; index of refraction for water = 1.33.

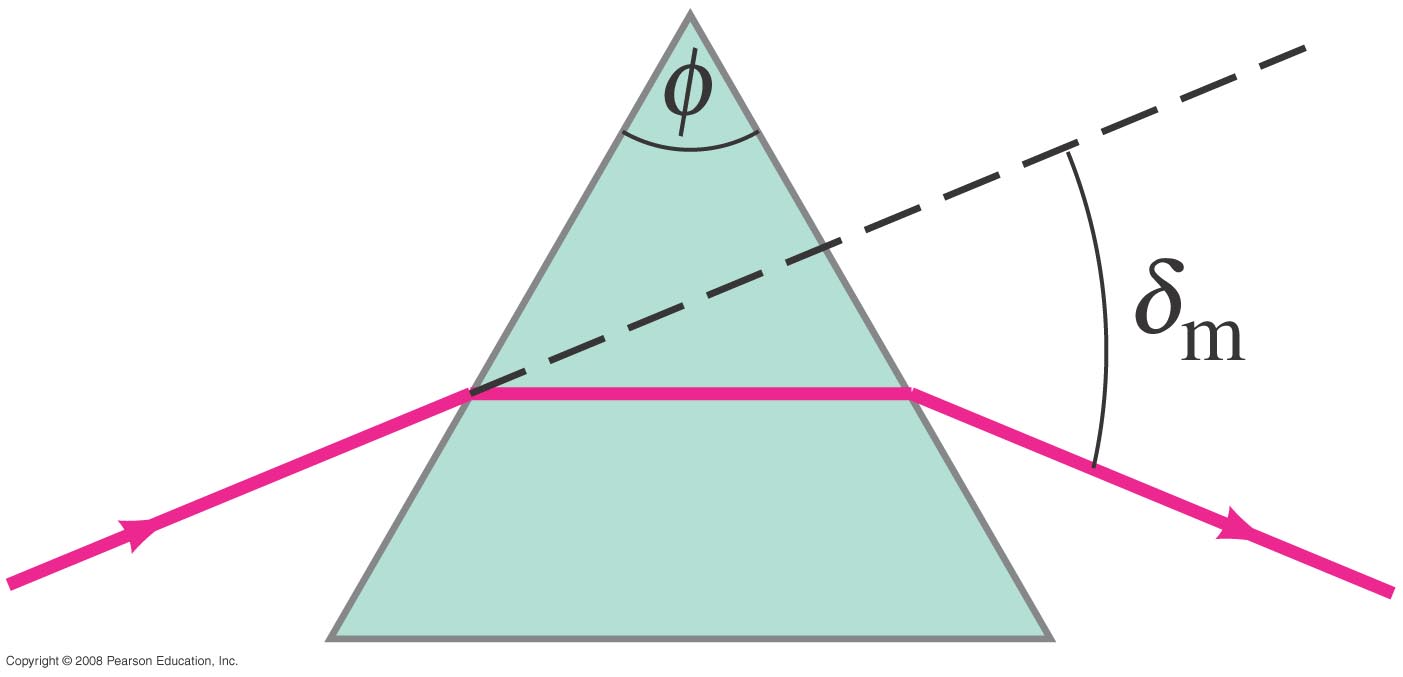
1) An aquarium filled with water has flat glass sides whose index of refraction is 1.56. A beam of light from outside the aquarium strikes the glass at a 43.5° angle to the perpendicular. ****

(a) What is the angle of the refracted light ray when it enters the glass ?

(*b*) What is the angle of this light ray when it enters the water ?

(*c*) What would be the refracted angle if the ray entered the water directly?

2) The apex angle of a prism is  as shown in the figure and .

****

(a) Under what condition will the incident ray not emerge from the opposite side ?

(b) What is the minimum incident angle for a ray if it is to emerge from the opposite side ?