Critical Angle Practice

1. Find the critical angle of light passing from ethanol (n=1.361) into air.

2. Find the critical angle for light traveling from glycerine (n = 1.473) into air.

3. Find the critical angle for light traveling from glycerine into water (n = 1.333).

4. Find the critical angle for light traveling from ice (n = 1.309) into air.

5. Which has a smaller critical angle in air, diamond (n = 2.419) or cubic zirconia (n = 2.20)? Show your work.

6. Find the sharpest angle that will allow total internal reflection in a fiber optic cable. The glass fiber has an index of refraction of 1.48, and the cladding (material that surrounds the fiber, similar to the insulation of a wire) has an index of refraction n = 1.46.

7. A block of glass has a critical angle of 45.0º. If light is passing from the glass into air, what is the index of refraction of the glass block?

8. Find the critical angle of light passing from a diamond (n=2.419) into air.

1. The refractive index of a certain type of glass is 1.2. What is the critical angle between the glass and air?
2. The refractive index of water is 1.33. What is the critical angle between water and air?