P8.W – Reflection and Refraction

1. The velocity of light in a certain medium is $1.911 * 10^8$ m/s. What is the index of refraction in this medium?

2. A light beam is incident on the interface between two media at an angle of $\theta_i = 15^o$ relative to the surface normal. The light is then transmitted through the interface at an angle of $\theta_t = 12^o$, again, relative to the normal. Determine the index of refraction of the second medium if the first is air ($n_{air} = 1$.)

3. Total internal reflection occurs when (circle one):

   a. $\theta_r = \theta_i$
   b. $\theta_i \geq \theta_{crit}$
   c. $tan\theta_i = n$.

   Draw a diagram of a light ray totally internally reflecting.