

Worksheet 1. Index of Refraction & Snell's Law Questions

1. Calculate the speed of light for the following mediums:

a. Water ($n=1.33$)

b. Diamond ($n=2.42$)

c. Plexiglas ($n=1.51$)

2. Calculate the refractive index for a substance if the speed of light in that medium is

a. 2.10×10^8 m/s

b. 1.50×10^8 m/s

3. Calculate the speed of light in a hypothetical material you have discovered and named in honour of yourself. Its refractive index is 1.10.

4. Calculate the angle of refraction for light as it passes from air to each of the mediums;

a. Water ($n=1.33$)

b. Diamond ($n=2.42$)

c. Plexiglas ($n=1.51$)

At an incidence angle of 25.0° .

5. Light travels 875 km in material "x" in 5.00 ms. Calculate the speed of light in the material and the material's index of refraction.