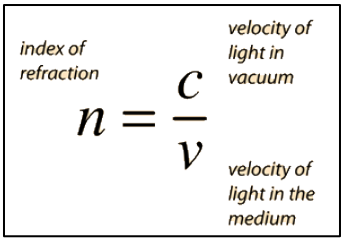
SNC2D Task – Refraction Name:

1. Water has an index of refraction of 1.33. Determine the speed that light travels in water.



2. Diamond has an index of refraction of 2.42. Determine the speed that light travels in diamond.

3. It is determined that light travels at a speed of 1.87×10^8 m/s in a substance. Determine the index of refraction of the substance.

4. An unknown substance has light travel through it at 2.23×10^8 m/s. Determine the index of refraction of the substance. (Round to two decimal places).

5. If a substance has a higher index of refraction, does light travel faster or slower in that medium? **Explain** why.

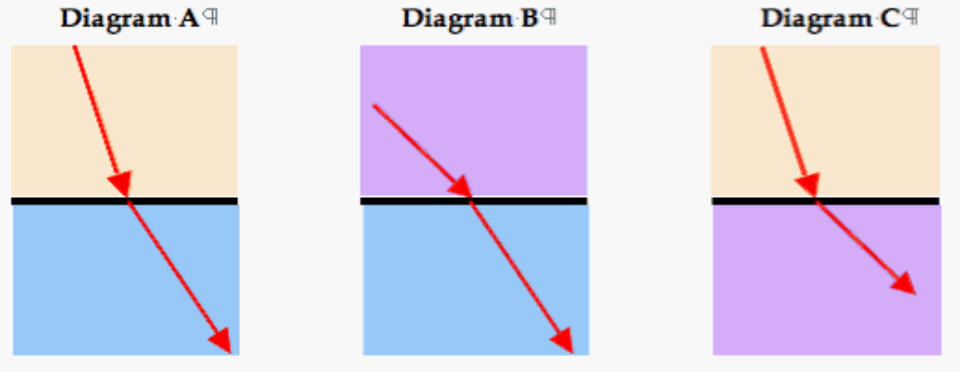
6. If a light ray passes from a substance with low index of refraction to another substance with high index of refraction, will the ray bend away from or closer to the normal? Include a **diagram** to support your answer.

7. What is the index of refraction in a medium where the speed of light is 1.5×10^{8} m/s?

8. (a) In which diagram is light being refracted the most? The least? (drawing the normal, and using a protractor will help greatly)

The most =

The least =



(b) In which diagram(s) is the light moving into a second medium with a HIGHER index of refraction?

(c) Assign an index of refraction value to each of the substances above, similar shades must receive the same index number. The index numbers you can use are n = 1.1 , n = 1.3, n =1.5

Do the index numbers justify the refracted ray behaviour in each diagram (A,B,C)?