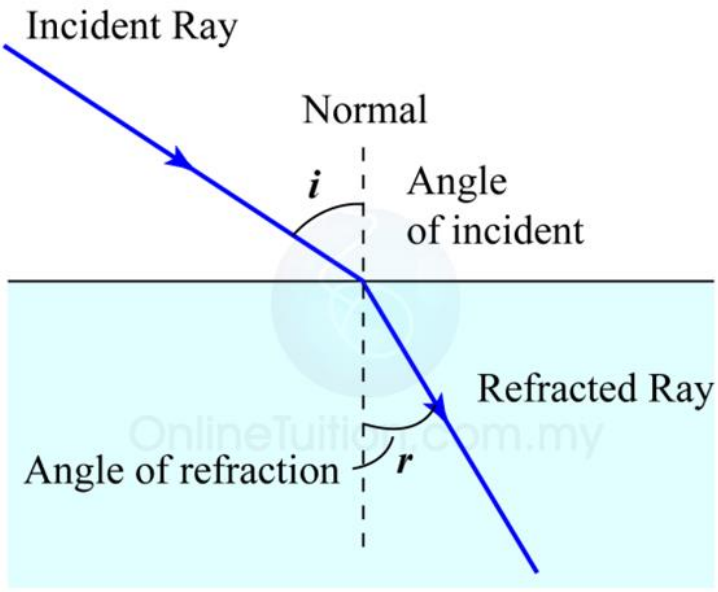
Answer on Question#82135 - Physics - Other

A ray of light strikes a surface of glass at an incident angle of 60 degrees with the normal. Calculate the angle of refraction in the glass. The refractive index of glass is 1.5. (Assume that the incident ray is in air)

Solution:



According to the Snell's law the angle of incident i, the angle of refraction r and the refractive indices of media n_i and n_r (respectively) are related as follows:

$$n_i \sin i = n_r \sin r$$

Since it is given that $i = 60°$, $n_r = 1.5$ and the refractive index of air is $n_i = 1$, we obtain

$$\sin r = \frac{n_i}{n_r} \sin i$$

$$\sin r = \frac{1}{1.5} \sin 60° = \frac{1}{\sqrt{3}}$$

$$r = 35.3°$$

Answer: $35.3°$.

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