Answer on Question #41500 – Physics – Other

Question.

According to the graph, at what angle is light refracted if it strikes the surface of glass at an angle of 30o?

a. 17o
b. 30o
c. 42o
d. 48o

$\theta_1 = 30°$
$\theta_2 = ?$

Solution.

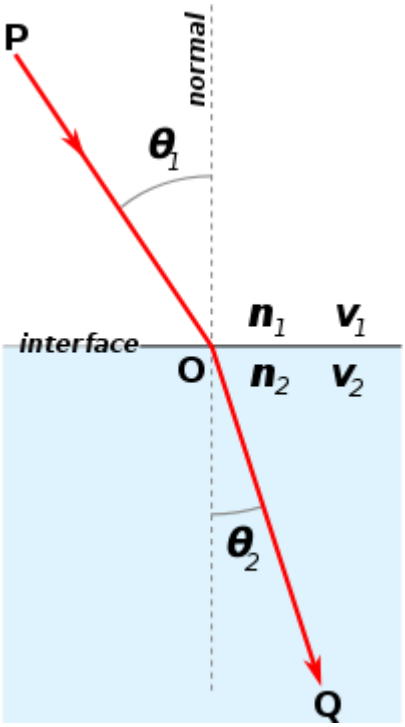

Fig.1. Refraction at the boundary between two media with different refractive index.

Write Snell's Law:

$$\frac{n_2}{n_1} = \frac{\sin\theta_1}{\sin\theta_2}$$

θ_1 is the angle of incidence;

θ_2 is the angle of refraction;

n is the refractive index of the respective medium.

The medium 1 is air and medium 2 is glass, then:

$n_2 > n_1 \rightarrow \sin\theta_1 > \sin\theta_2 \rightarrow \theta_1 > \theta_2$

So, $\theta_2 < 30°$. It's only suitable $\theta_2 = 17°$ among your options of answers.

Answer.

a. $17°$