Answer on Question#46350, Physics, Other

Given a refractive index and angle of incidence, it is easy to find the angle of refraction using Snell's law:

$$n_1 \sin\alpha_1 = n_2 \sin\alpha_2 \ ,$$

where α_1 is the angle of incidence, α_2 is the angle of refraction, n_1, n_2 are refractive indexes of corresponding substances (light goes from substance one to substance two). For glass, $n = 1.5$ (in this case $n_2 = 1.5$, $n_1 = 1$).

Hence, $\alpha_2 = \arcsin\left(\frac{n_1}{n_2}\sin\alpha_1\right) = \arcsin\left(\frac{2}{3}\sin 30\,deg\right) \approx 19.47\,deg$. Thus, the angle of refraction is 19.47 degrees, which is less than angle of incidence because glass has bigger refraction index than air ($n_2 > n_1$).