

44. (a) The law of refraction requires that $\sin \theta_1 / \sin \theta_2 = n_{\text{water}} = \text{const.}$ We can check that this is indeed valid for any given pair of θ_1 and θ_2 . For example $\sin 10^\circ / \sin 8^\circ = 1.3$, and $\sin 20^\circ / \sin 15^\circ 30' = 1.3$, etc.
- (b) $n_{\text{water}} = 1.3$, as shown in part (a).