

Answer on Question #44804, Physics, Optics

what is the speed of light in a medium of refractive index 1.8

Solution.

The refractive index is defined as

$$n = \frac{c}{v}$$

where c is the speed of light in vacuum and v is the speed of light in the medium

$$v = \frac{c}{n} = \frac{3 \cdot 10^8 \text{ m/s}}{1.8} \approx 1.67 \cdot 10^8 \text{ m/s}$$

Answer: $1.67 \cdot 10^8 \text{ m/s}$