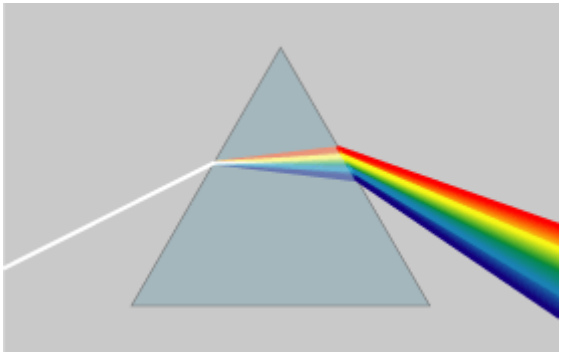
Answer on Question #67853 - Physics / Optics

Does the refractive index of glass depend on color of light? If yes why? If no why?

Solution:

The refractive index of the glass depends on color of light. This phenomenon is called dispersion (see https://en.wikipedia.org/wiki/Dispersion_(optics)).



By definition, the refractive index is equal to the ratio of the speed of light in vacuum and the phase velocity of light in the optical medium

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

Because the phase velocity of the light wave depends on its frequency (color), so the refractive index depends on color too.

Answer: Yes.