

PH203 — Notes

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1 Ray Optics

Dispersion is the phenomenon that occurs because the index of refraction depends on the frequency of the light. It occurs because different wavelengths refract at different angles, and is the underlying mechanics of the rainbow prism effect. Recall that

$$n_1 \sin \theta_1 = n_2 \sin \theta_2$$

and that

$$\lambda_1 > \lambda_2 \Rightarrow n_1 < n_2.$$

1.1 Formation of images, ray tracing

Which of the following are sources of light in the room?

1. Flashlight
2. Laser
3. Sun
4. Pencil
5. Cat
6. Your friend's nose

Answer: all of them! If you are seeing something, light is coming off of that object.