

PHYS 1512: Week 8 (Review Week)

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Review

Q1

Unpolarized light with an intensity of $\bar{S}_o = 20 \frac{W}{m^2}$ is incident on a pair of polarizers. The first polarizer has its transmission axis aligned at 75° from the vertical. The second polarizer has its transmission axis aligned at 15° from the vertical.

- What is the intensity of the light when it emerges from the first polarizer?
- What is the intensity of the light when it emerges from the second polarizer?

Q2

A distant galaxy emits light that has a wavelength of λ_s . On earth, the wavelength of this light is measured to be λ_o . If $\lambda_s > \lambda_o$:

- Decide whether this galaxy is approaching or receding from the earth.
- Find an expression for the speed of the galaxy relative to earth in terms of λ_o , λ_s and c .