

Waves and Blackbody Radiation Practice

Physics II: Modern Physics

College of the Atlantic

1. Red light has a wavelength of 700 nm. What is its frequency?
2. An FM radio station broadcasts at 90 Megahertz. What is the wavelength of the radio waves?
3. The electromagnetic radiation used for dental X-rays has a wavelength of 0.30 nm. What is the frequency of the X-rays?
4. A woodstove is at 250 degrees C. The surface area of the woodstove is 1.5 m^2 . Use Stefan's law to estimate the total intensity of the energy. Does your answer seem reasonable?
5. At what wavelength is the peak intensity of radiation emanating from a blackbody that is at 1500 Kelvin? What is the frequency of this radiation?