Problems

15.2 The Behavior of Electromagnetic Radiation 14.

Visible light has a range of wavelengths from about 400 nm to 800 nm . What is the range of frequencies for visible light?

  a. 3.75×10^6 Hz to 7.50×10^6 Hz
  b. 3.75 Hz to 7.50 Hz
  c. 3.75×10^{-7} Hz to 7.50×10^{-7} Hz
  d. 3.75×10^{14} Hz to 7.50×10^{14} Hz

15.

Light travels through the wall of a soap bubble that is 600 nm thick and is reflected from the inner surface back into the air. Assume the bubble wall is mostly water and that light travels in water at 75 percent of the speed of light in vacuum. How many seconds behind will the light reflected from the inner surface arrive compared to the light that was reflected from the outer surface?

  a. 4.0×10^{-8} s
  b. 5.3×10^{-6} s
  c. 2.65×10^{-15} s
  d. 5.3×10^{-15} s