NAME _____ DATE _____ CLASS _____

Section 14-1

HOLT PHYSICS

Concept Review

Characteristics of Light

1. The orbital radius of the Earth (the average Earth-Sun distance) is 1.496×10^{11} m. Mercury's orbital radius is 5.79×10^{10} m and Pluto's is 5.91×10^{12} m. Calculate the time required for light to travel from the Sun to each of the three planets. (Hint: Use 3.00×10^{8} m/s for the speed of light.)

a. Sun-Earth _____

b. Sun-Mercury _____

c. Sun-Pluto _____

2. Typical wavelengths of visible light colors are listed below.

violet	blue	green	orange-yellow	red
420 nm	450 nm	550 nm	600 nm	700 nm

a. Calculate the frequency of the electromagnetic waves that carry these colors.

b. How does frequency change when wavelength increases?

c. Does the speed of light in air depend on frequency? on wavelength?