

ASTR 130 Sections 1, 2 HOMEWORK 1

Name: _____ Date: _____

1. The average distance of Pluto from the Sun is 40 AU. How long does it take for light to travel across the solar system from one side of Pluto's orbit to the other?
 - A) 8 min
 - B) 22 hrs
 - C) 5 1/2 hrs
 - D) 11 hrs

2. Visible light occupies which position in the whole electromagnetic spectrum?
 - A) between radio and infrared radiation
 - B) between ultraviolet and X-rays
 - C) between infrared and ultraviolet
 - D) between infrared and microwave

3. Visible wavelengths of electromagnetic radiation have a range of wavelengths of
 - A) 90 to 130 nm.
 - B) 1 to 100 nm.
 - C) 800 to 1900 nm.
 - D) 400 to 700 nm.

4. Suppose an astronomical satellite observes the Orion Nebula at a wavelength of 1250 nm. In what wavelength range is this satellite observing?
 - A) X-rays
 - B) ultraviolet
 - C) infrared
 - D) visible light

5. What is the wavelength of radiation emitted by an FM radio station transmitting at a frequency of 100 MHz?
 - A) 300 m
 - B) 0.03 m
 - C) 1 m
 - D) 3 m

6. In a radio wave transmitter (such as that used by a radio or TV station), when the frequency of the signals is increased, the
- A) wavelength is decreased.
 - B) speed of transmission of the waves is increased.
 - C) wavelength and speed of transmission both increase.
 - D) wavelength remains constant.
7. What is the one fundamental difference between X-rays and radio waves?
- A) They always come from different sources.
 - B) Their wavelengths are very different.
 - C) Radio waves are always wavelike, while X-rays always behave like particles.
 - D) Their speeds in outer space are different.