

WebAssign**Ch. 16 Light - Regular physics (Homework)**ISAAC PARKER
Physics, section T1_P5_Carlson,
Instructor: Sarah Carlson**Current Score** : 40 / 40 **Due** : Sunday, November 6 2011 11:00 PM MST1. 2/2 points | [Previous Answers](#)

GPhys09 16.MC.025.

Sound does not travel through a vacuum. How do we know that light does?

We know light travels through vacuums because there is light in space. Light is able to travel from the sun to the earth sans any medium.

2. 2/2 points | [Previous Answers](#)

GPhys09 16.MC.033.

What color of light has the shortest wavelength?

- violet
- yellow
- blue
- green
- red

3. 2/2 points | [Previous Answers](#)

GPhys09 16.MC.034.

What is the range of the wavelengths of light, from shortest to longest?

- 400 nm to 700 nm
- 2000 nm to 2500 nm
- 700 nm to 400 nm
- 2500 nm to 2000 nm

4. 2/2 points | [Previous Answers](#)

GPhys09 16.MC.035.

Of what colors does white light consist?

Red, Orange, Yellow, Green, Blue, Indigo, and Violet combine to make white light.

5. 2/2 points | [Previous Answers](#)

GPhys09 16.MC.036.

Is black a color?

Yes
 No

✓

Why does an object appear to be black?

An object may appear black because little or no visible light is being reflected back.

6. 2/2 points | [Previous Answers](#)

GPhys09 16.MC.039.

What happens to the wavelength of light as the frequency increases?

The wavelength increases.
 The wavelength decreases.
 The wavelength stays the same.

✓

7. 2/2 points | [Previous Answers](#)

GPhys09 16.MP.054.

Light takes 1.28 s to travel from the Moon to Earth. What is the distance between them?

384000000 ✓ m

8. 2/2 points | [Previous Answers](#)

GPhys09 16.MP.059.

Convert 700 nm, the wavelength of red light, to meters.

.0000007 ✓ m

9. 2/2 points | [Previous Answers](#)

GPhys09 16.SR.018.

What color of light must be combined with blue light to obtain white light?

- cyan
- green
- red
- yellow



10.2/2 points | [Previous Answers](#)

GPhys09 16.SR.019.

What primary pigment colors must be mixed to produce red? (Select all that apply.)

- blue
- cyan
- magenta
- yellow



11.2/2 points | [Previous Answers](#)

GPhys09 16.SR.020.

(a) What color will a yellow banana appear to be when illuminated by white light?

- orange
- yellow
- blue
- black



(b) What color will a yellow banana appear to be when illuminated by green and red light?

- orange
- black
- blue
- yellow



(c) What color will a yellow banana appear to be when illuminated by blue light?

- black
 - blue
 - orange
 - yellow
- ✓

12.2/2 points | [Previous Answers](#)

GPhys09 16.SR.021.

The speed of red light is slower in air and water than in a vacuum. The frequency, however, does not change when red light enters water. Does the wavelength change? If so, how?

- The wavelength increases.
 - The wavelength decreases.
 - The wavelength does not change.
- ✓

13.2/2 points | [Previous Answers](#)

GPhys09 14.MP.076.

An ocean wave has a length of 9.5 m. A wave passes a fixed location every 1.6 s. What is the speed of the wave?

✓ m/s

14.2/2 points | [Previous Answers](#)

GPhys09 14.MR.089.

The frequency of yellow light is 4.6×10^{14} Hz. Find the wavelength of yellow light. The speed of light is 300 000 km/s.

✓ m

15.2/2 points | [Previous Answers](#)

GPhys09 14.MP.078.

Water waves in a lake travel 4.1 m in 1.9 s. The period of oscillation is 1.2 s.

(a) What is the speed of the water waves?

✓ m/s

(b) What is their wavelength?

✓ m

16.2/2 points | [Previous Answers](#)

GPhys09 14.MP.085.

If you slosh the water in a bathtub at the correct frequency, the water rises first at one end and then

at the other. Suppose you can make a standing wave in a 145 cm long tub with a frequency of 0.25 Hz. What is the velocity of the water wave?

✓ m/s

17.2/2 points | [Previous Answers](#)

GPhys09 15.MP.052.

You hear the sound of the firing of a distant cannon 6.8 s after seeing the flash. How far are you from the cannon? (Assume 343 m/s for the speed of sound.)

✓ km

18.2/2 points | [Previous Answers](#)

GPhys09 15.MP.055.

The sound emitted by bats has a wavelength of 4.0 mm. What is the sound's frequency in air?

✓ Hz

19.2/2 points | [Previous Answers](#)

GPhys09 14.MC.055.

Is interference a property of only some types of waves or all types of waves?

- all waves
 some waves



Explain.

Since waves, by their nature, can occupy the same space at the same time, they can constructively or destructively interfere.

20.2/2 points | [Previous Answers](#)

GPhys09 14.MC.041.

What is the primary difference between a mechanical wave and an electromagnetic wave?

Mechanical waves are motion of a medium - electromagnetic waves kind of are the medium. They're forces that move in a wave.