Light Test Review:

1. A “normal” line is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a surface.
2. UV radiation has a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ frequency than IR radiation.
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_are the colors that appear along the opposing edges of a rainbow.
4. The speed of light in water (n = 1.333) is less than/more than the speed of light in glass (n=1.5).
5. An object appears \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (color) if it reflects all colors of light equally.
6. The primary colors are \_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and the secondary colors are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. A red ball is red because it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ red light.
8. Different colors of light are associated with different or same wavelengths?
9. What types of images can a concave mirror produce?
10. An \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_image is produced through reflection from a concave mirror when the distance of the object to the mirror is less than the focal length.
11. Which of the following from the electromagnetic spectrum has the longest wavelength?
    1. Radio b. red light c. Gamma d. x- ray
12. What color is produced by mixing green light and blue light?
13. Which is not a secondary color?
    1. yellow b. red c. magenta d. cyan
14. Refraction is the term for the bending of a wave disturbance as it passes at an angle from one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into another.
15. What type of image is produced by a convex mirror?
16. When red light is compared with violet light,
    1. Both have the same frequency b. red light travels faster than violet light

c. Both travel at the same speed d. both have the same wavelength

1. What 3 waves are in the “danger zone”?
2. Describe the image of a concave mirror when the object’s distance from the mirror is less than the focal- point distance?
3. Describe the image produced by a concave mirror of focal length 3 cm for a real object placed 10 cm from the mirror.
4. A jeweler cut a diamond so the light will refract at an angle of 17ᵒ to the normal. What is the index of refraction of the diamond when the angle of incidence is 45ᵒ? (nair = 1)

Formula:

Plug in numbers:

Answer:

1. What is the wavelength of microwaves of 3.0 x 109 Hz frequency?

Formula:

Plug in numbers:

Answer:

1. An object located 30 cm in front of a lens forms an image on a screen 10 cm behind the lens. What is the focal length of the lens?

Formula:

Plug in numbers:

Answer:

1. What is the frequency of a radio wave with a wavelength of 1.7 Hm? Remember: KHDbdcm

Formula:

Plug in numbers:

Answer:

1. Find the height of an image when a 6 cm tall object placed 48 cm from a concave mirror that has a focal length of 18 cm.

Formula:

Plug in numbers:

Answer:

26. Find the angle of refraction for a ray of light that enters a glass of water from air at an angle of 35.7ᵒ to the normal. (nair = 1 and nwater = 1.333)

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| Formula: | Plug in numbers: | Answer: |