

The index of refraction for a substance is 1.65.  
Calculate the speed of light in the substance.

Give an example in nature or society for each:

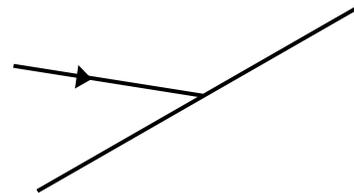
- a) electric discharge
- b) bioluminescence
- c) fluorescence
- d) incandescence

The speed of light in a medium is  $2.34 \times 10^8$  m/s.  
Calculate the index of refraction.

State the two laws of reflection.

The angle of incidence in water ( $n=1.33$ ) is  $25^\circ$ . If the light enters glass ( $n=1.52$ ), calculate the angle of refraction.

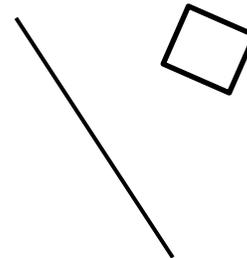
Draw the normal and reflected ray, write the angle of incidence and angle of reflection in the correct spots.



Which has a greater wavelength: x-rays or microwaves? \_\_\_\_\_

Use object-image lines to draw the image in the plane mirror.

Write the symbol for wavelength \_\_\_\_\_

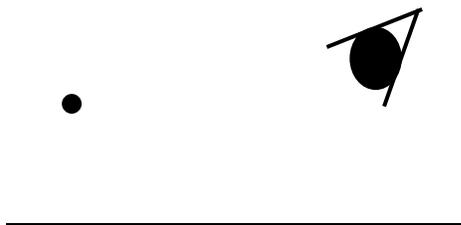


Which has greater energy, red or green light?  
\_\_\_\_\_

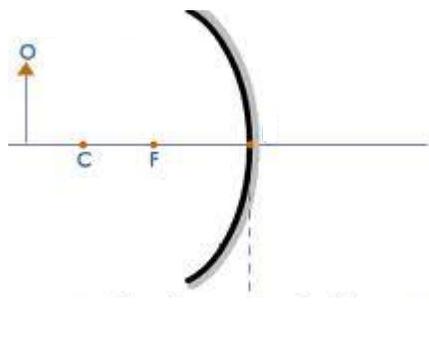
Which form of energy do humans perceive as heat?  
\_\_\_\_\_

All of the forms of radiation are referred to as the \_\_\_\_\_ spectrum.

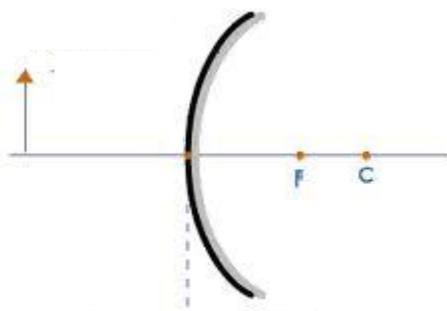
Draw how the eye sees the image.



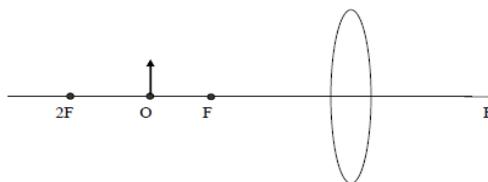
Draw the ray diagram and give the characteristics of the image.



Draw the ray diagram and give the characteristics of the image.



Draw the ray diagram and give the characteristics of the image.



Light travels from quartz ( $n=1.46$ ) to air. Calculate the critical angle for the quartz-air boundary.

Write the 3 main rules for drawing ray diagrams for a curved mirror.

- 1) A ray \_\_\_\_\_
- 2) A ray \_\_\_\_\_
- 3) A ray \_\_\_\_\_

A light source that produces its own light is called \_\_\_\_\_. All electromagnetic waves travel at the speed of \_\_\_\_\_. A magnifying glass is an example of a \_\_\_\_\_ lens. At the critical angle, the angle of refraction is \_\_\_\_\_.

TRUE-OR-FALSE  
 Light is a form of energy \_\_\_\_\_. Light is visible electromagnetic waves \_\_\_\_\_. Light can only travel through a medium \_\_\_\_\_. The centre of a lens is called the centre of curvature \_\_\_\_\_. A converging lens spreads parallel light rays apart \_\_\_\_\_.