10) You are 1.6m tall. What is the shortest wall mirror you need to see your whole body, while standing, in the mirror?

11) If you use a concave mirror to view your face, where do you place your face in relation to the mirror?

12) An object is 2.5 m away from a concave mirror with a focal length of 1.0 m. Where will the image form? Will it be real or virtual>

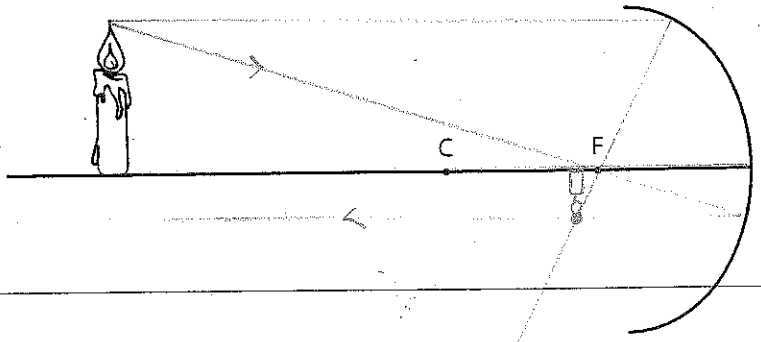
13) What is the focal length of a concave mirror if a real image of an object 6.0 m away firms 3.0 m from the mirror?

14) What is the critical angle for a glass that has an index of refraction of 1.52?

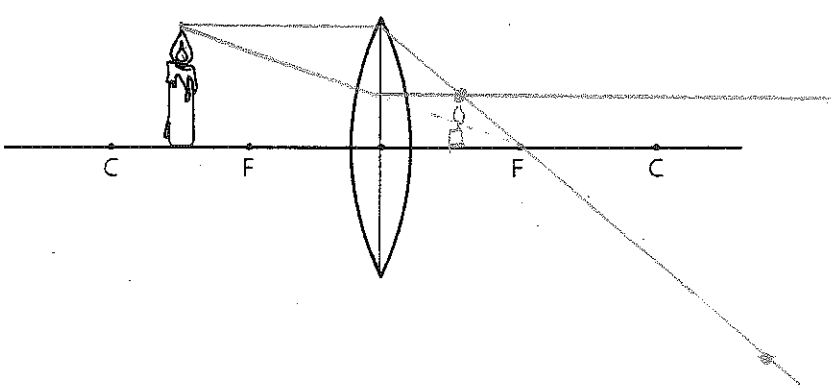
15) The critical angle of a liquid is 45°. What is the index of refraction of the liquid?

16) At what speed would light travel in glass with an index of refraction of 2.0?

17) Complete the following ray diagram to show where the image of the candle will form and what its relative size will be



18) Complete the following ray diagram to show where the image of the candle will form and what its relative size will be



Waves and Optics Review Questions

1) If a wave from trough to crest is 4.2 m high, what is the amplitude of the wave?

2) At room temperature, sound has a speed of 3.4×10^2 m/s. What is the wavelength of sound from a tuning fork that vibrates at 256 Hz?

3) Light travels with a speed of 3.00×10^8 m/s. What is the frequency of red light if its wavelength is 610 nm ($1nm = 10^{-9}$ m)

4) A rubber duck is floating in the waves and goes up and down three times in 1 s. If the wave travels an average distance of 4 m in a second, what is the wavelength?

5) What is the frequency of a wave that has a wavelength of 25 cm and is travelling at 5 km/hr?

6) An observer counts 36 waves arriving at the shore of a beach in a time of 3.00 min

    a) What is the frequency of the waves?

    b) What is the period of the waves?

7) What is the frequency of a wave that has a period of

    a) 100 s

    b) 0.5 s

    c) 1.0×10^{-2}s

8) Draw two waves travelling towards each other that will create

    a) Constructive interference

    b) Destructive interference

9) What is the period of the hour hand on a clock