

Answers to Self-assessment practice tests Block 3

- 1 a 100 m
 b 310 m/s
 c She could move further away from the wall so that the distance is greater.

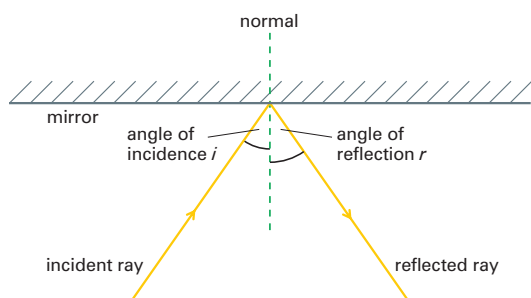
- 2 a They have the same frequency/period (same number of waves in a given time interval).
 b Wave B will sound softer/quieter (or wave A louder) because B has a smaller amplitude/height.

c quieter, lower pitch trace A

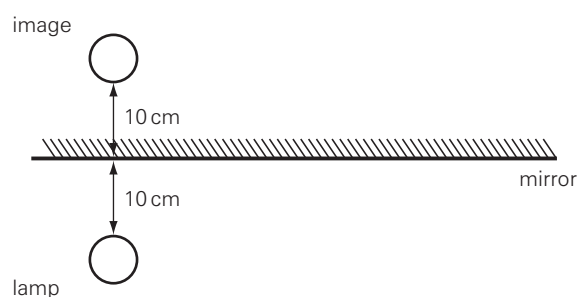


- 3 a The cone pushes on the air particles as it moves outwards, then pulls them back again. The particles move back and forth, pushing on their neighbours so that they create a disturbance that passes through the air.
 b The amplitude of their vibrations will increase (they will move back and forth over a greater distance).

4 a-c



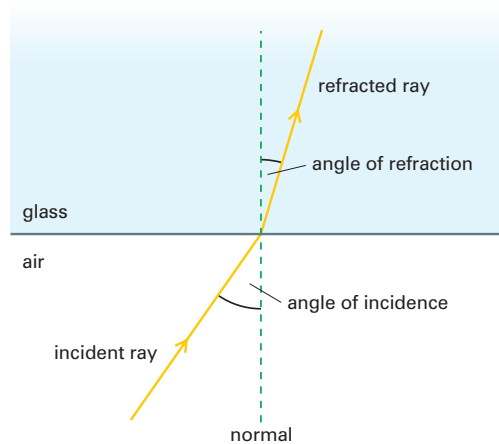
- 5 a The image is 10 cm behind the mirror and level with the lamp.



b virtual

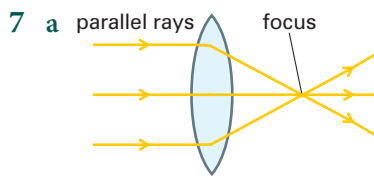
c LAMP

6 a-b



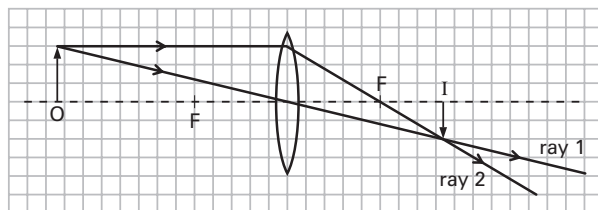
c 17.6°

d air



- b the principal focus
c a bright spot of light

8 a-c



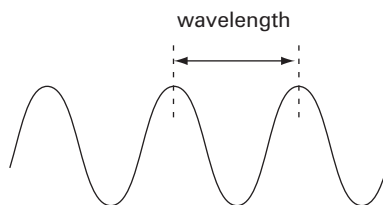
d real

- 9 a the number of waves per second
b 250 Hz
c pitch increases

10 a transverse

- b hand: from side to side;
wave: along table, away from boy

c



d longitudinal

- e rarefaction: where sections of spring are spread apart (farther apart than average);
compression: where they are squashed together.

11 a 0.917 m

b 550 Hz

c 360 Hz has lower pitch

12 a reflection

b diffraction

c diffraction

d refraction

13 a red, orange, yellow, green, blue, indigo, violet

b dispersion

c only one colour/frequency/wavelength is present in laser light

14 a ultraviolet

b gamma rays

c cooking; sending telephone/communications signals

d 3.0 m