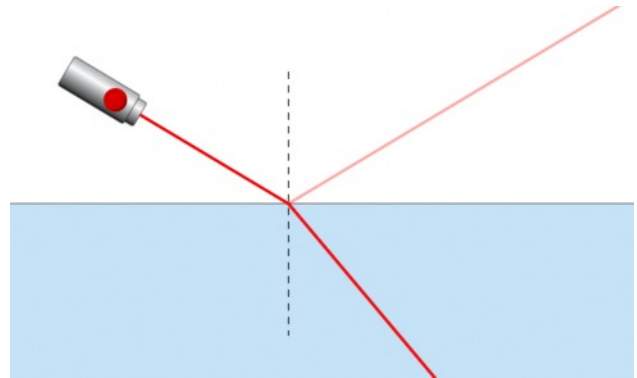


On the diagram across mark the :

Q1

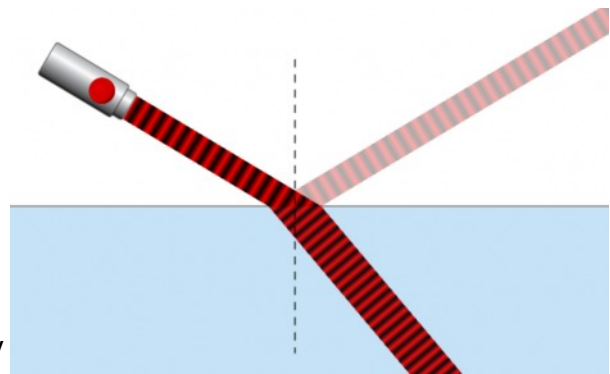
- Incident ray
- Refracted ray
- Reflected ray
- Angle of incidence
- Angle of refraction
- Normal line



Q2

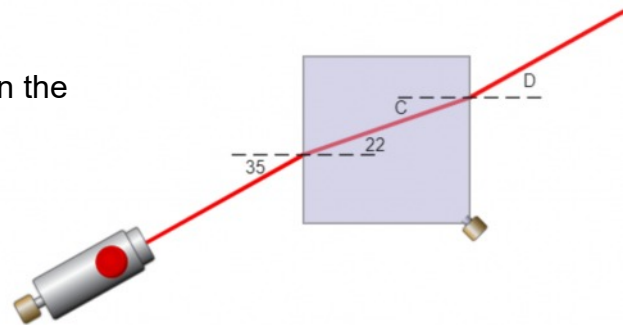
A ray of monochromatic light travels from air into water.

- Describe what happens to the direction of the wave's path
- Describe what happens to the wavelength of the light as it travels from air into the water.
- How does the speed of the light ray change from air into the water?



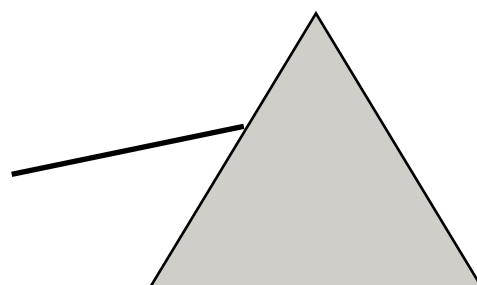
Q3

Determine the angles marked C and D in the diagram across.



Q4

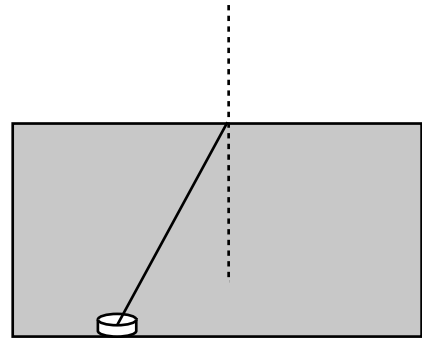
Complete the ray of light paths through this glass prism. You must draw in a normal line at each interface. The ray is monochromatic.



Q5

A ray of light leaves an underwater lamp as shown in the diagram.

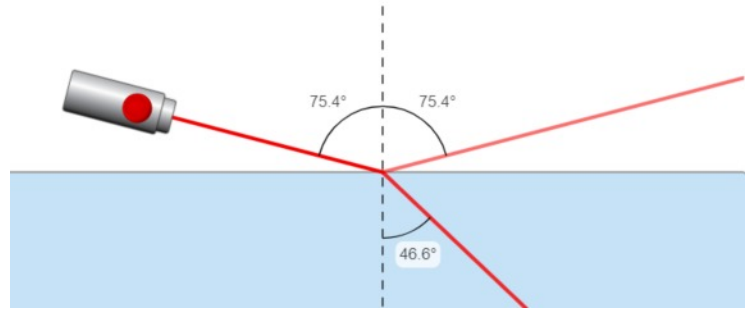
- (a) Complete the diagram showing the direction the ray takes after it leaves the water.
- (b) Label the angles of incidence and refraction.



Q6

In the diagram shown state the angle of

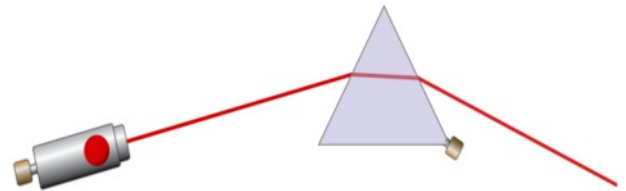
- (a) incidence
- (b) refraction



Q7

A ray of red light is passed through a glass prism.

- (a) Redraw the diagram showing the path taken by a blue ray of light.
- (b) Draw the diagram if a white light is shone through the prism



Q8

A ray of monochromatic light is shone at different angles of incidence into a glass shape. The angle of refraction is recorded for each angle of incidence shown in the table.

Draw a graph of the data

Estimate from your graph the angle of refraction when the angle of incidence is 45°

Angle of incidence / degrees	Angle of refraction/degrees
15	11
20	15
30	22
35	25
55	38
70	45