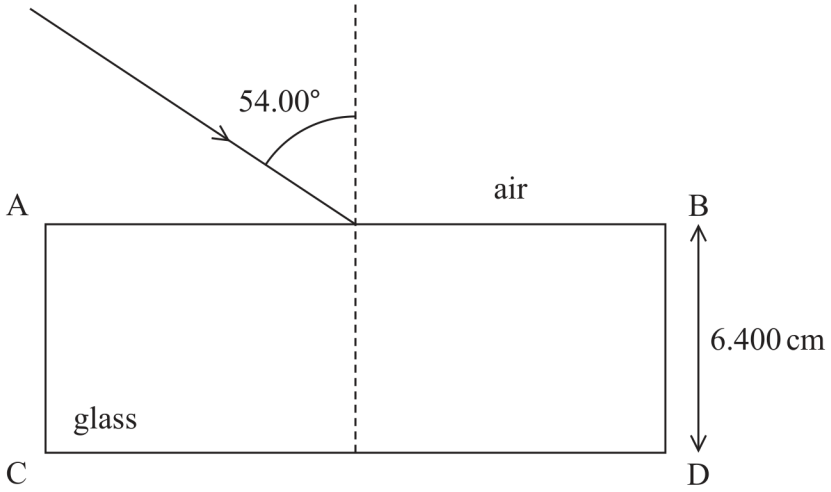
13 The refractive index of glass varies with the colour of light.

refractive index of glass for red light = 1.513
refractive index of glass for violet light = 1.532

(a) A ray of white light is incident on side AB of a rectangular glass block, as shown.



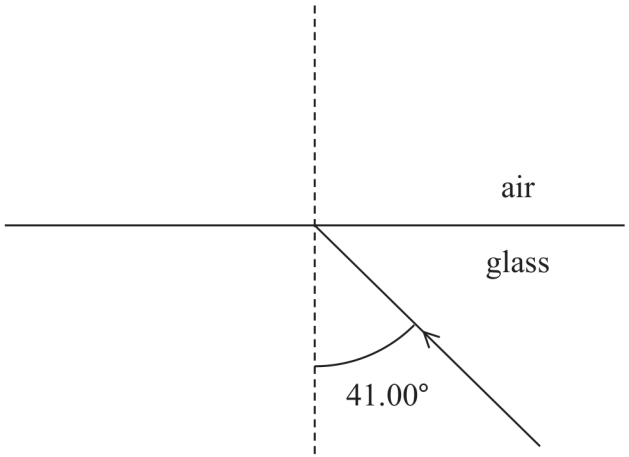
The red light and violet light from the incident ray arrive at slightly different points on side CD.

Determine the distance between these points.

(5)

Distance between points = ...

(b) White light is incident on a boundary between glass and air, as shown.



Explain what happens to the red light and the violet light when meeting the boundary.
Your answer should include calculations.

(4)

(Total for Question 13 = 9 marks)