

2 This question is about the reflection of light.

(a) Light reflects from a plane mirror.

(i) Use words from the box to complete the sentence below.

(1)

less than

equal to

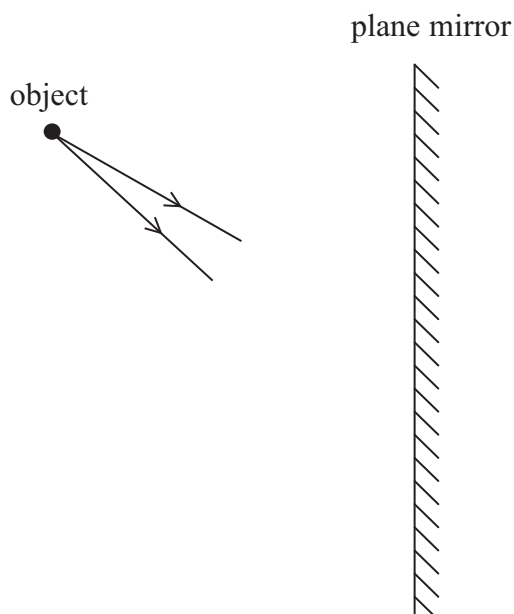
greater than

When light reflects from the surface of a plane mirror, the angle of incidence is the angle of reflection.

(ii) The diagram shows two rays of light coming from an object.

Continue the two rays and add further lines to the diagram to show how an image is formed by a plane mirror.

(2)



(iii) The image in a plane mirror is a **virtual image**.

How can you tell this from your diagram?

(1)

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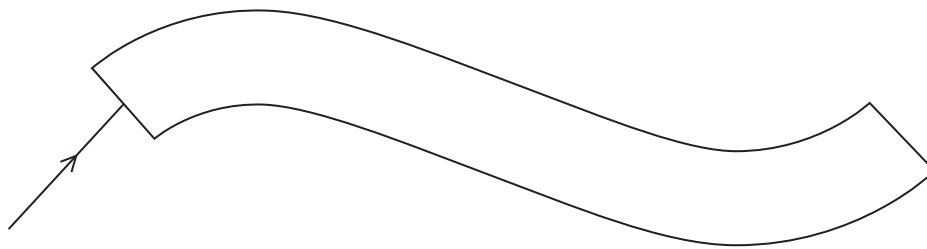
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(b) Light can also reflect along optical fibres by total internal reflection.

- (i) Complete the diagram to show the path of the ray of light as it enters and passes through the optical fibre.

(2)



- (ii) State **two** conditions required for total internal reflection to happen.

(2)

1

2

- (iii) Telephone signals can be sent along optical fibres using light. In earlier systems the signals were sent using electric currents in copper wires.

Suggest **one** advantage of sending signals using optical fibres.

(1)

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(Total for Question 2 = 9 marks)

