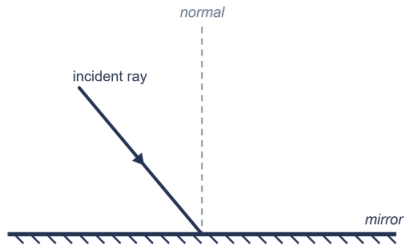
Reflection of Waves *(Physics only)*

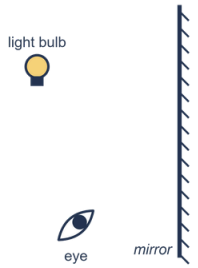
Drawing reflection ray diagrams

1 · MEASURE *i*, THEN DRAW THE REFLECTED RAY



Angle of incidence *i* = _____ ° Angle of reflection *r* = _____ °

2 · DRAW TWO RAYS FROM THE BULB INTO THE EYE. MARK THE IMAGE.



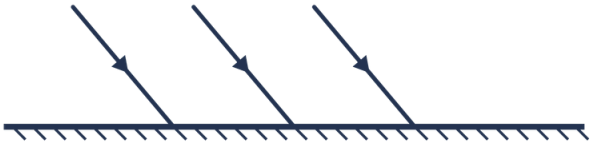
The image is the same _____ behind the mirror as the object is in _____.

CHECK YOUR DIAGRAM

- ☐ angle *i* = angle *r*
- ☐ an arrow in the middle of each ray
- ☐ each ray touches the mirror
- ☐ dotted line for the normal
- ☐ angles measured from the normal
- ☐ *i* and *r* labelled
- ☐ image the same distance behind the mirror
- ☐ dashed lines behind the mirror

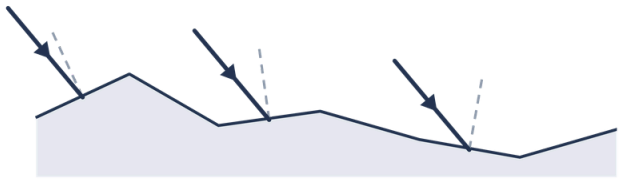
Specular and diffuse reflection — draw the reflected rays

A SMOOTH SURFACE



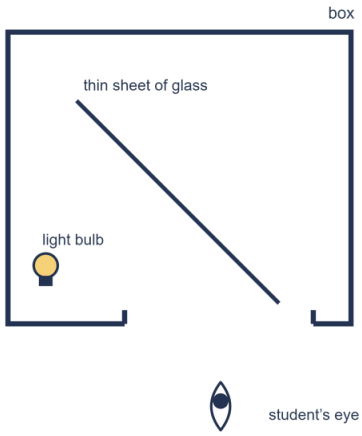
_____ reflection: the rays are reflected in _____ direction.

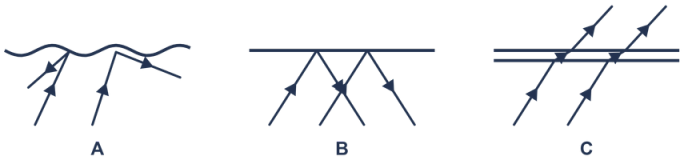
A ROUGH SURFACE (THE DASHED LINES ARE NORMALS)



_____ reflection: the rays are _____ in different directions.

Exam-style questions





1 **Figure 1** shows rays of light incident on three different surfaces. Which **one** shows diffuse reflection? Tick one box. **A** ☐ **B** ☐ **C** ☐ **[1]**

2 A light bulb and a thin sheet of glass are inside a box. The glass acts as a mirror. A student looking into the box cannot see the bulb, but sees an image of it ('Pepper's ghost').

(a) Use a ruler to complete a ray diagram to show how the image of the light bulb is formed. Mark and label the position of the image. **[4]**

(b) The image seen by the student is **virtual**. Why? **[1]**

2(B) ANSWER

_____

_____

[Total: 6 marks]