Total internal reflexion I

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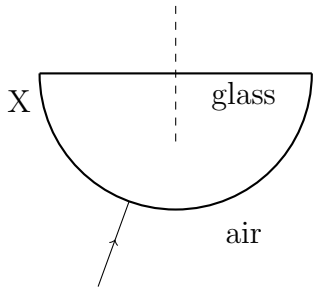
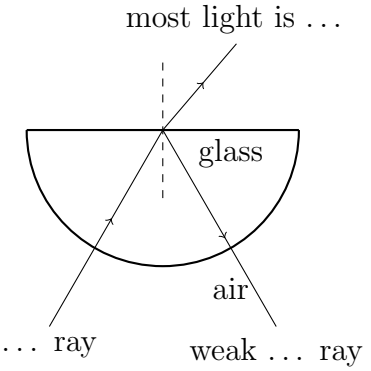
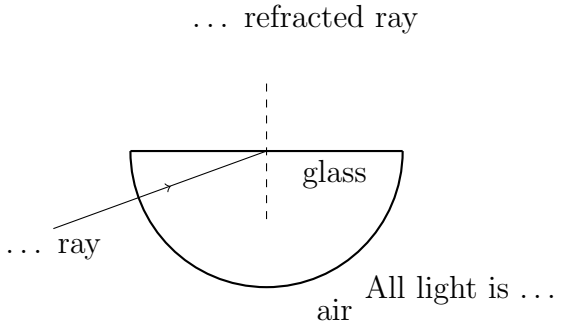
1. What two conditions are necessary for a ray of light to undergo total internal reflexion?
2. (a) What is the name of the maximum angle at which refraction occurs for a ray of light hitting a boundary going to a less dense medium?
   (b) What is an approximate value of this angle for a glass–air boundary?
3. The diagram below shows a glass block, with a ray of light entering.



   Copy the diagram, and answer the questions below.
   (a) Complete the path of the ray.
   (b) Why does the ray not change direction as it enters the block?
   (c) What would happen to the ray if it entered at position X?
4. The diagram below shows two identical glass blocks. On the diagram,
   (a) complete the missing words, and
   (b) compete the path of the ray in the second diagram.



angle ... than critical angle



angle ... than critical angle