

### Light Reflection

Read from **Lesson 1** of the **Reflection** chapter at **The Physics Classroom**:

<http://www.physicsclassroom.com/Class/refln/u1311a.html>  
<http://www.physicsclassroom.com/Class/refln/u1311b.html>  
<http://www.physicsclassroom.com/Class/refln/u1311c.html>

**MOP Connection:** Reflection and Mirrors: sublevel 1

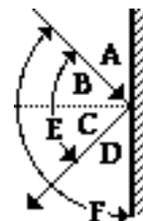
- Place a letter in the blank in order to classify the following objects as being either luminous (L) or illuminated (I) objects.  
 \_\_\_\_\_ Sun                      \_\_\_\_\_ Moon                      \_\_\_\_\_ Person  
 \_\_\_\_\_ Whiteboard                      \_\_\_\_\_ Light bulb                      \_\_\_\_\_ Candle
- These diagrams are intended to represent the path of light from an object to an eye as the eye sights at the image of the object. Each diagram is incorrect. Discuss what makes them incorrect.

<p>a.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p><b>Object</b></p> </div> <div style="text-align: center;"> <p><b>Image</b></p> </div> </div> <p>Discussion: _____</p> <p>_____</p> <p>_____</p>	<p>b.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p><b>Object</b></p> </div> <div style="text-align: center;"> <p><b>Image</b></p> </div> </div> <p>Discussion: _____</p> <p>_____</p> <p>_____</p>
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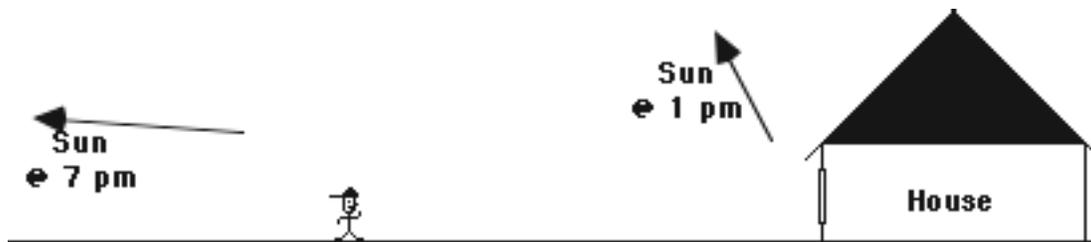
- State the law of reflection in the space below.

Consider the diagram at the right in answering the next three questions.

- The angle of incidence is denoted by angle \_\_\_\_.
- The angle of reflection is denoted by angle \_\_\_\_.
- If an incident ray of light makes an angle of  $35^\circ$  with the mirror surface then the angle of reflection is \_\_\_\_\_ $^\circ$ .

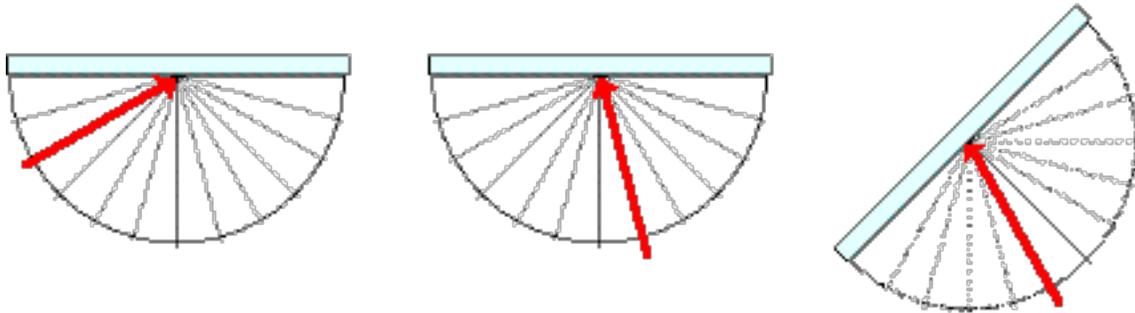


- Why do windows of distant houses appear to reflect the sun only when rising or setting? Explain in words. Use the diagram to help, drawing appropriate light rays on the diagram.



## Light, Reflection and Mirrors

8. Use the law of reflection and the *embedded* protractor in order to draw the reflected ray associated with the given incident ray for the following plane mirror situations. (Markings are provided at  $15^\circ$  increments.)



9. Now for a research question:

In this unit we will often discuss how the reflection of light from a mirror results in the formation of an image. The term **image** as used here has an obvious context - physics. But the term image has numerous other contexts - psychology (a positive self-*image*), religion (created in God's *image*), business (the company's *image*), medicine (an x-ray *image*), etc.

Your research question involves finding a dictionary and looking up the definition of the word **image**. Write down several meaningful definitions from several contexts in the spaces below. (If you do not have a dictionary at home then you can use [dictionary.com](http://dictionary.com) or [wikipedia.org](http://wikipedia.org).)

- a. \_\_\_\_\_  
\_\_\_\_\_
- b. \_\_\_\_\_  
\_\_\_\_\_
- c. \_\_\_\_\_  
\_\_\_\_\_
- d. \_\_\_\_\_  
\_\_\_\_\_
- e. \_\_\_\_\_  
\_\_\_\_\_

10. Now write in your own words a personal definition of what you believe an image of an object is: