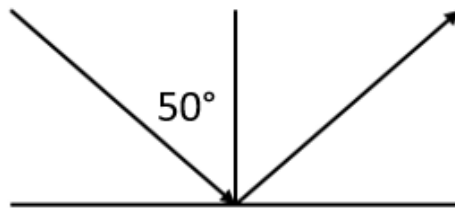


Work each of the following problems. SHOW ALL WORK.

1. Observe five objects around you. List the objects and decide whether each object is a diffuse or a specular reflector of light.

2. Complete the diagram below with the three missing angles:



3. A child stands 2 m in front of a plane mirror. How far is the child from his image?

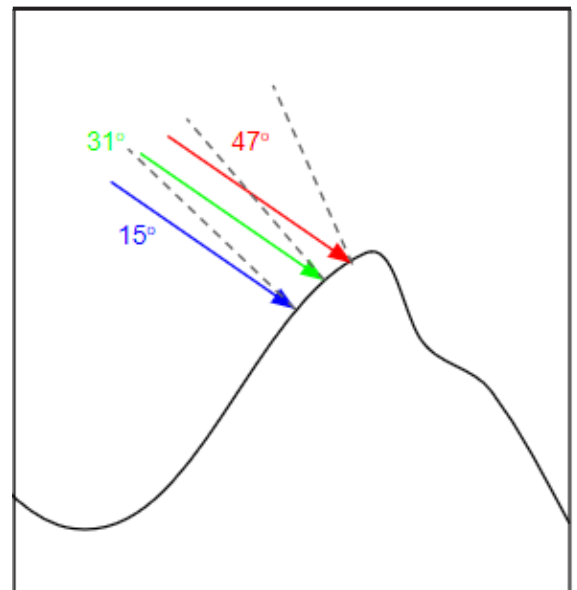
4. Three parallel rays of light are incident at slightly different points on a bumpy surface, as indicated in the figure.

The angles of incidence are 15° for the blue ray, 31° for the green ray, and 47° for the red ray.

- a. What are the angles of reflection for the three rays?

- b. Will the three rays remain parallel after reflection?

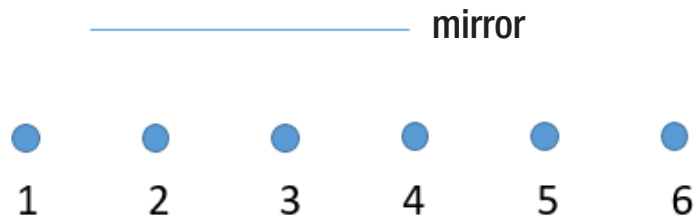
- c. Sketch the paths of the reflected rays on the diagram.



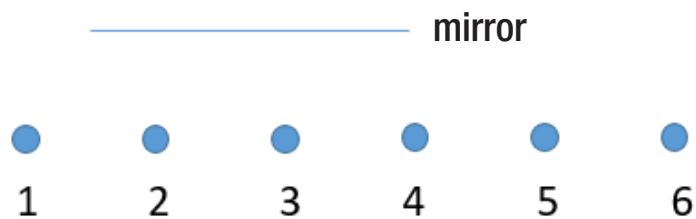
Work each of the following problems. SHOW ALL WORK.

5. Draw a diagram of yourself standing in front of a plane mirror. Using the law of reflection, determine the smallest mirror that will enable you to see your reflection from the top of your head to the bottom of your feet. Hint: The reflected rays must go to your eyes.

6. Using the diagrams below of six students standing in front of a plane mirror, sketch the reflected rays to answer the following questions.



- a. Who can student 6 see?



- b. Who can student 3 see?
