In each exercise $R_k: A \rightarrow A'$. Find an equation of line k.

	32.	33.	34.	35.	36.	37.
A	(5, 0)	(1, 4)	(4, 0)	(5, 1)	(0, 2)	(−1, 2)
A'	(9, 0)	(3, 4)	(4, 6)	(1, 5)	(4, 6)	(4, 5)

C **38.** Draw the x- and y-axes and the line l with equation $y = -x$. Plot several points and their images under R_l. What is the image of (a, b)?

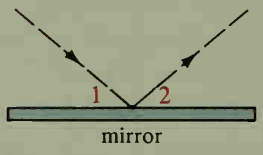
39. Draw the x- and y-axes and the vertical line j with equation $x = 5$. Find the images under R_j of the following points.

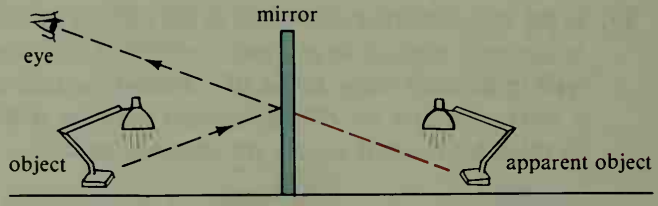
a. (4, 3) **b.** (0, −2) **c.** (−3, 1) **d.** (x, y)

40. Repeat Exercise 39 letting j be the horizontal line with equation $y = 6$.

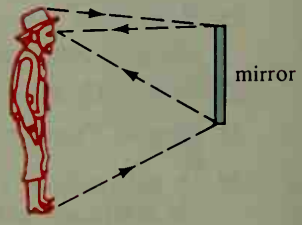
Application *Mirrors*

If a ray of light strikes a mirror at an angle of 40°, it will be reflected off the mirror at an angle of 40° also. The angle between the mirror and the reflected ray is always congruent to the angle between the mirror and the initial light ray. In the diagram at the left below, $\angle 2 \cong \angle 1$.





We see objects in a mirror when the reflected light ray reaches the eye. The object appears to lie behind the mirror as shown in the diagram at the right above.



You don't need a full-length mirror to see all of yourself. A mirror that is only half as tall as you are will do if the mirror is in a position as shown. You see the top of your head at the top of the mirror and your feet at the bottom of the mirror. If the mirror is too high or too low, you will not see your entire body.

A periscope uses mirrors to enable a viewer to see above the line of sight. The diagram at the right is a simple illustration of the principle used in a periscope. It has two mirrors, parallel to each other, at the top and at the bottom. The mirrors are placed at an angle of 45° with the horizontal. Horizontal light rays from an object entering at the top are reflected down to the mirror at the bottom. They are then reflected to the eye of the viewer.