Six-Foot Person Problem

Lesson Notes

Learning Outcomes

- How much mirror do you need to view your entire image in a plane mirror?

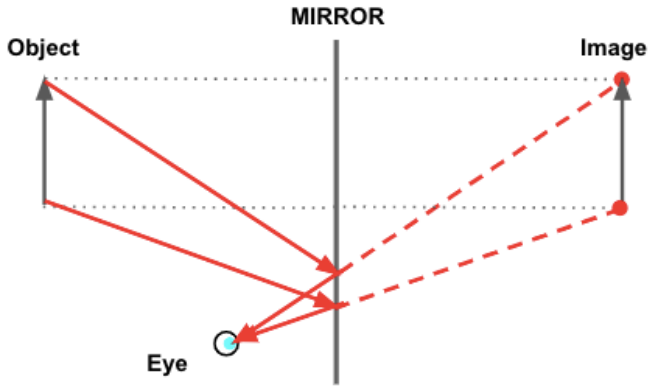
The Problem

A 6-foot tall person is purchasing a plane mirror to be hung vertically on a wall. What is the minimum amount of mirror required for the person to view their entire image?

A. Exactly 3 feet (half their height).
B. More than 3 feet.
C. Less than 3 feet.
D. Nonsense! The amount depends on how far the person stands from the mirror.

Ray Diagrams ... Revisited

A **ray diagram** is a conceptual tool that shows how light gets from the object to the mirror to the eye as a person sights at the image of an object.

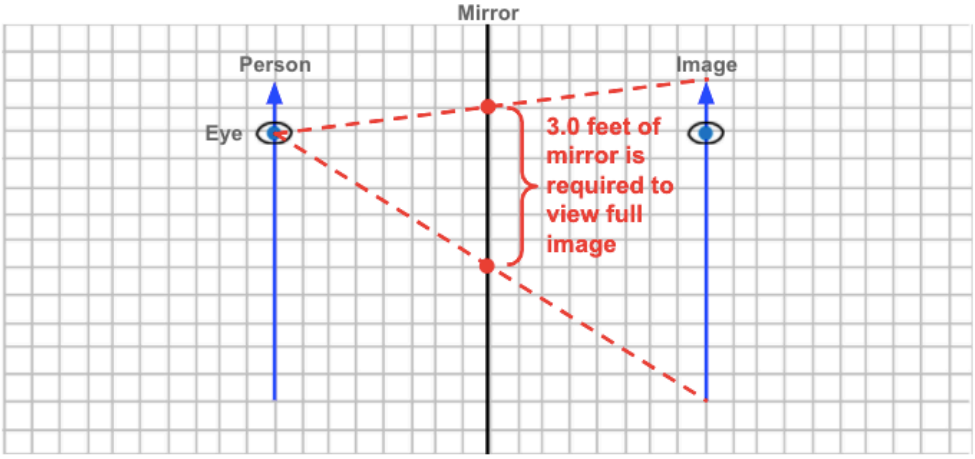


Directions

1. Locate the image.
2. Draw the reflected ray along the line of sight.
3. Draw the incident ray from object to mirror.

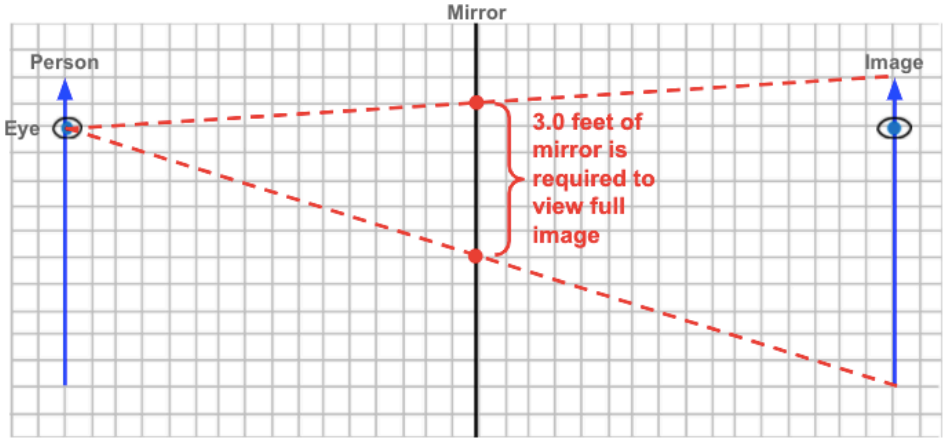
The Solution to the Problem

Scale: Each square is 0.50-feet along its edge (6-foot tall person, 4 feet from mirror)



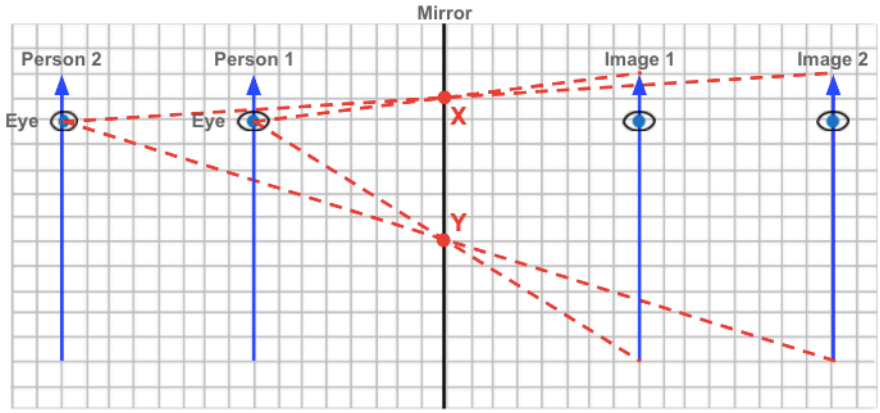
But What If ... ?

Scale: Each square is 0.50-feet along its edge (6-foot tall person, 4 feet from mirror)



Summary

Regardless of the distance from the mirror, a 6-foot person needs 3-feet of mirror.



Is There a "Rule" for Viewing Others in the Mirror?

If you're view another person's image, how much mirror do you need - ½ their height?