

Curved Mirror Ray Diagrams

Calculate the image distance and size for each case. Enter these values in the data table.

Using unlined paper in landscape orientation, draw ray diagrams in order to locate the image of each 2.0 cm object. Use a compass to accurately depict the curvature of each mirror. Label the focus "F" and center of curvature "C." Draw all three principal rays (ray through or toward focus reflects parallel, parallel ray reflects through or away from focus, and ray through the center of curvature reflects straight back), if possible, and construct the image in the proper location. Measure the image size and distance. Record these values in the data table and compare with the calculated.

On your diagrams, classify each image as 1) **REAL** or **VIRTUAL**, 2) **UPRIGHT** or **INVERTED**, and 3) **REDUCED**, **ENLARGED**, or **SAME SIZE**.

Mirror	Object Distance	Object size	Focal Length	Calculated		Measured	
				d_i	s_i	d_i	s_i
Concave	18.0 cm	2.0 cm	6.0 cm				
Concave	12.0 cm	2.0 cm	6.0 cm				
Concave	9.0 cm	2.0 cm	6.0 cm				
Concave	6.0 cm	2.0 cm	6.0 cm				
Concave	3.0 cm	2.0 cm	6.0 cm				
Convex	15.0 cm	2.0 cm	-5.0 cm				
Convex	10.0 cm	2.0 cm	-5.0 cm				
Convex	7.0 cm	2.0 cm	-5.0 cm				
Convex	4.0 cm	2.0 cm	-5.0 cm				
Convex	1.0 cm	2.0 cm	-5.0 cm				

*** Notice that the focal length of a convex mirror is negative.***