

1. Optics	A	A. The study of how light behaves.
2. Image	D	B. A lens or mirror that is bigger in the middle.
3. Object	F	C. Light rays that spread apart.
4. Concave	G	D. Produced by a lens or mirror.
5. Convex	B	E. Light rays that come together.
6. Convergent	E	F. What you are actually looking at.
7. Divergent	C	G. A lens or mirror that is bigger at the ends.

1. Normal	A	A. A line drawn perpendicular to the surface of a mirror or lens.
2. Mirror	F	B. An optical device uses refraction to bend light.
3. Angle of incidence	C	C. From the normal to the incoming ray.
4. Angle of reflection	D	D. From the normal to the outgoing ray.
5. Lens	B	E. Where all parallel rays converge.
6. Focus	E	F. An optical device that works by reflection.

The angle of incidence is: E  
 The angle of reflection is: C  
 The normal is: D  
 The incident ray is: F  
 The reflected ray is: B

You stand 2 feet in front of a mirror. How far away from you does your image in the mirror seem?  
4ft

*Convergent or Divergent?*  
 Concave lens? D      Convex mirror? D  
 Concave mirror? C      Convex lens? C

The angle *between* the incident ray and reflected ray is  $60^\circ$ . What is the angle of reflection?  
 $30^\circ$

The angle of reflection is  $40^\circ$ . What is the angle of incidence?  
 $40^\circ$

*Real or Virtual focal point?*  
 Concave lens? V      Convex mirror? V  
 Concave mirror? R      Convex lens? R

Which letter shows where the incoming light ray will go?

What is a real image?  
Can be projected

Will a real image ever occur with a divergent device?  
no, only convergent

Why or why not?  
Light rays have to cross

Which arrow shows the correct path of the light ray?

*Can produce a real image?*  
 Concave lens? N      Convex mirror? N  
 Concave mirror? Y      Convex lens? Y

Draw where the rays will go and label the type of mirror.

When you look into your bathroom mirror, are you upside down (inverted) or right side up (upright)?  
right side up

Is this a real or virtual image? V  
 Why? 1. not inverted  
2. You are on other side of mirror

What is the focal length of a bathroom (flat) mirror?  
 $\infty$  infinity

The graphic shows what you would see when looking at the object thru a lens. Is the image real or virtual?  
virtual

Why? 1. right side up

Why can we see virtual images?  
Our eyes have a convergent lens which make a virtual image real in our eye