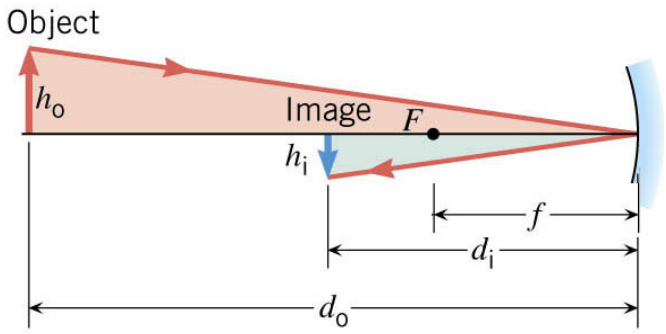
Sign Convention for Spherical Mirrors and Thin Lenses

Applies to: Mirror and Thin Lens Equation: $1/d_o + 1/d_i = 1/f$

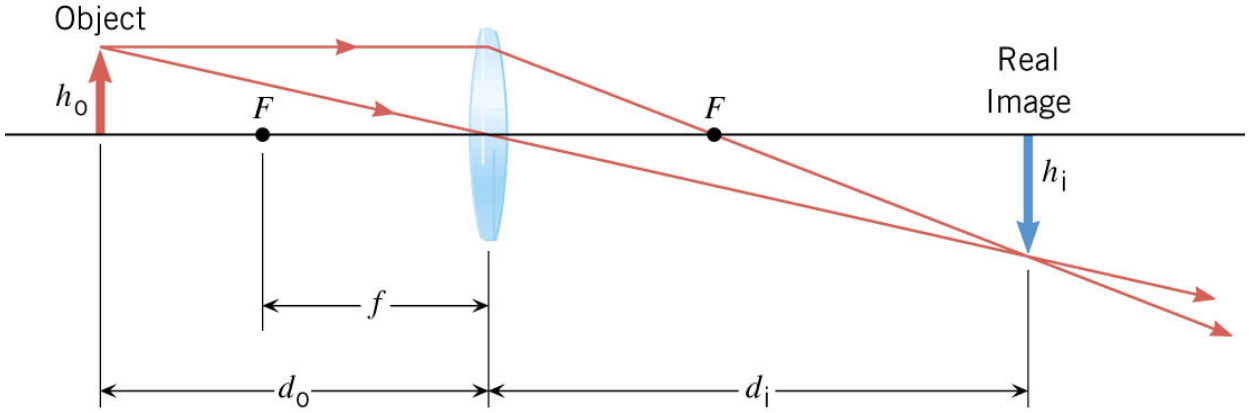
Magnification Equation: Image height/Object height = $h_i/h_o = -d_i/d_o$

	Spherical Mirrors	**Lenses**
Focal Length (*f*)	+ for concave mirrors	+ for a converging lens
	- for convex mirrors	- for a diverging lens
Object Distance (d_o)	+ if object is in front of the mirror (real object)	+ if the object is to the left of the lens (real object)
	- if object is behind the mirror (virtual object)*	- if the object is to the right of the lens (virtual object)*
Image Distance (d_i)	+ if the image is in front of the mirror (real image)	+ for an image (real) formed to the right of the lens by a real object
	- if the image is behind the mirror (virtual image)	- for an image (virtual) formed to the left of the lens by a real object
Magnification (*m*)	+ for an image that is upright with respect to the object	+ for an image that is upright with respect to the object
	- for an image that is inverted with respect to the object	-for an image that is inverted with respect to the object.

* Optical system that use multiple mirrors/lenses sometimes use the image formed by the first mirror/lens as the object for the second mirror/lens. When this happens, the object distance is negative and the object is said to be a virtual object.



Mirror



Thin Lens