

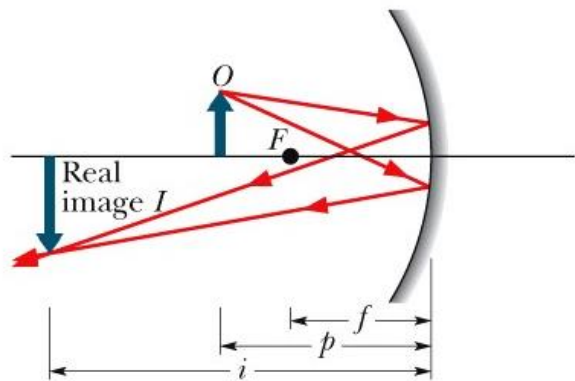
# Sign Convention for Spherical Mirrors and Thin Lenses

Applies to: Mirror and Thin Lens Equation:  $1/p + 1/i = 1/f$

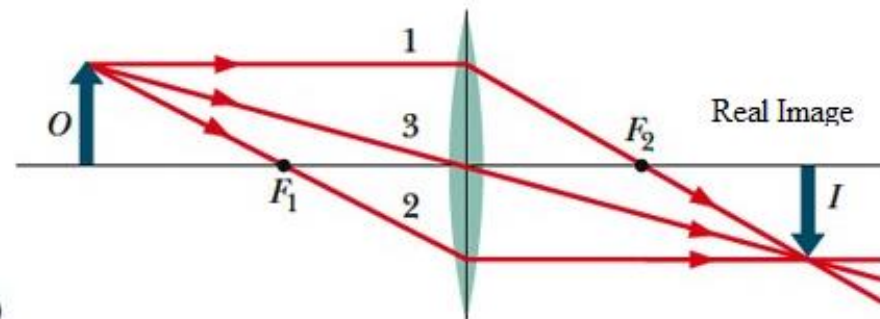
Magnification Equation:  $m = h'/h = -i/p$

	Spherical Mirrors	Lenses
<b>Focal Length (<math>f</math>)</b>	+ for concave mirrors	+ for a converging lens
	- for convex mirrors	- for a diverging lens
<b>Object Distance (<math>p</math>)</b>	+ 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)*
<b>Image Distance (<math>i</math>)</b>	+ 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
<b>Magnification (<math>m</math>)</b>	+ 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