PHYSICS 232 – CHAPTER 34: GEOMETRIC OPTICS

Lateral magnification:

$$m = \frac{y'}{y}$$

Spherical mirror:

$$\frac{1}{s} + \frac{1}{s'} = \frac{2}{R} = \frac{1}{f}$$

Lateral magnification: $m = -s'/s$.

Spherical mirror refracting surface:

$$\frac{n_a}{s} + \frac{n_b}{s'} = \frac{n_b - n_a}{R}$$

Lateral magnification: $m = -n_a s'/n_b s$.

Lens:

$$\frac{1}{s} + \frac{1}{s'} = (n-1)\left(\frac{1}{R_1} - \frac{1}{R_2}\right) = \frac{1}{f}$$

Angular magnification:

$$M = \frac{\theta}{\theta'}$$

For simple magnifier,

$$M = \frac{25\text{ cm}}{f}$$