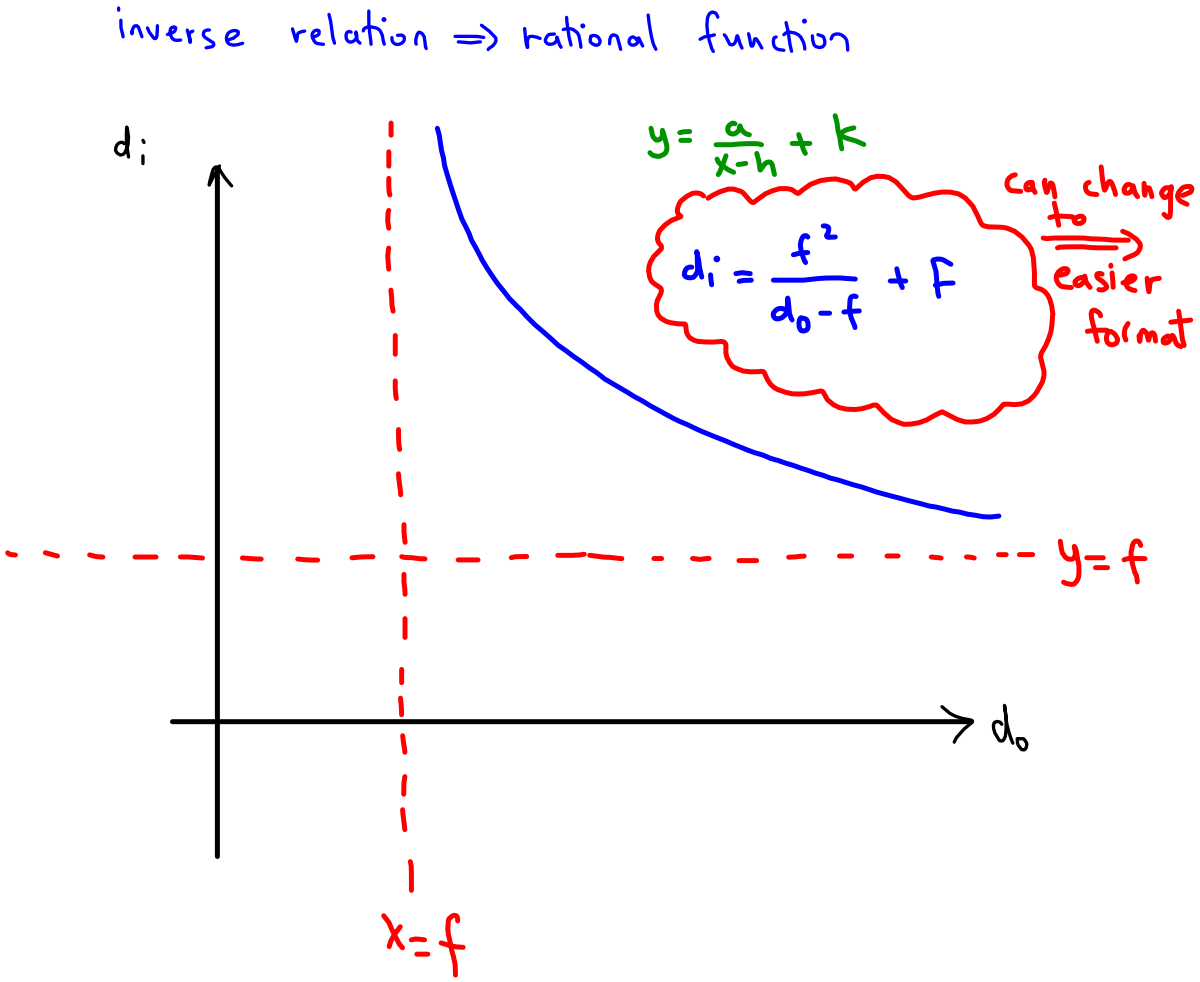
Curved Mirror Equation

Goal:

- to become familiar with the curved mirror equation and the magnification equation

In the lab you collected data comparing object distance to image distance.

What is the relationship between these two quantities?



Equations for Curved Mirrors

$$\frac{1}{f} = \frac{1}{d_i} + \frac{1}{d_0}$$

$$M = \frac{h_i}{h_o} = -\frac{d_i}{d_o}$$

Magnification

Sign Convention:

Heights : Upright + Inverted −

Distances (object, image, focal) : Real + Virtual −

A concave mirror has a focal length of 15 cm. A 5 cm tall object is placed 20 cm from the mirror.

a) What is the object position?

b) What is the image height?