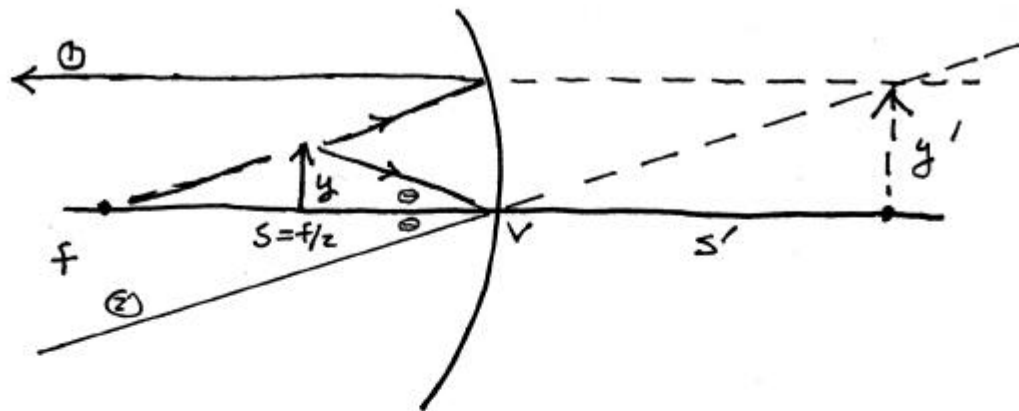


Concave Mirror - object inside the focal point, let $s = f/2$



path 1 - ray through focal point goes out to infinity

path 2 - ray through the vertex reflected at same angle

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

$$\frac{2}{f} + \frac{1}{s'} = \frac{1}{f} \Rightarrow \frac{1}{s'} = -\frac{1}{f} \quad s' = -f$$

$$m = -\frac{s'}{s} = -\frac{(-f)}{f/2} = +2 \quad \text{image virtual, erect}$$