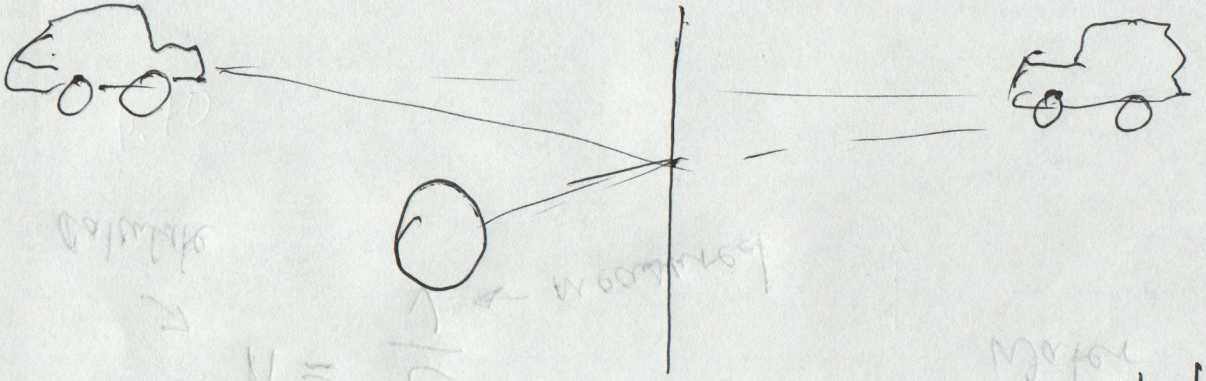
P.70 5.



Virtual

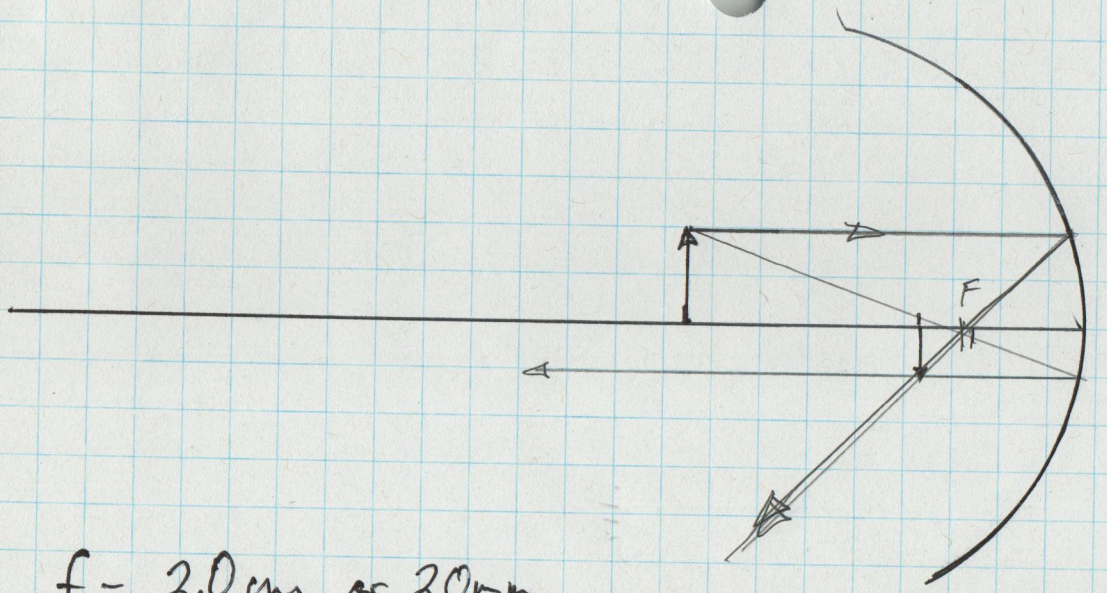
Upright

Same Size

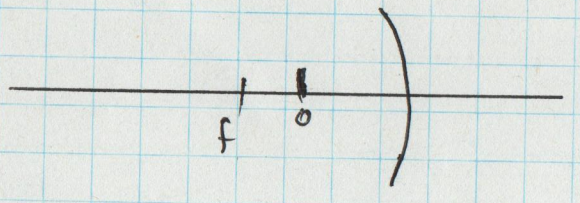
Unless mirror curved.

Because lateral inversion in plane mirrors the writting would read correctly in a rear view mirror

p.70
7.



10. $f = 2.0\,cm$ or $20\,mm$



$d_o = 1.5\,cm$ $\quad d_i = ?$

$M = ?$

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

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

$$\frac{1}{d_i} = \frac{1}{f} - \frac{1}{d_o}$$

$$d_i = \left(\frac{1}{f} - \frac{1}{d_o}\right)^{-1} = \left(\frac{1}{2.0\,cm} - \frac{1}{1.5\,cm}\right)^{-1}$$

$d_i = -6.00\,cm$

$$M = -\frac{d_i}{d_o} = -\frac{(-6.00\,cm)}{1.5\,cm} = 4.0$$

Speed of light $V = c = 299,792,458\ m/s$

in a vacuum = in outer space.

$\Rightarrow$ [Light slows down in air, in water, in other optical media (glass, plastic)

$$V = \frac{C}{n}$$

$n \Rightarrow$ Index of Refraction

Vacuum $n = 1.000,000$ Exactly 1.0.

Air $n = 1.000\ 29$

Water $n = 1.33$

$$n = \frac{C}{V}$$

C ← defined

V ← measured

Calculate