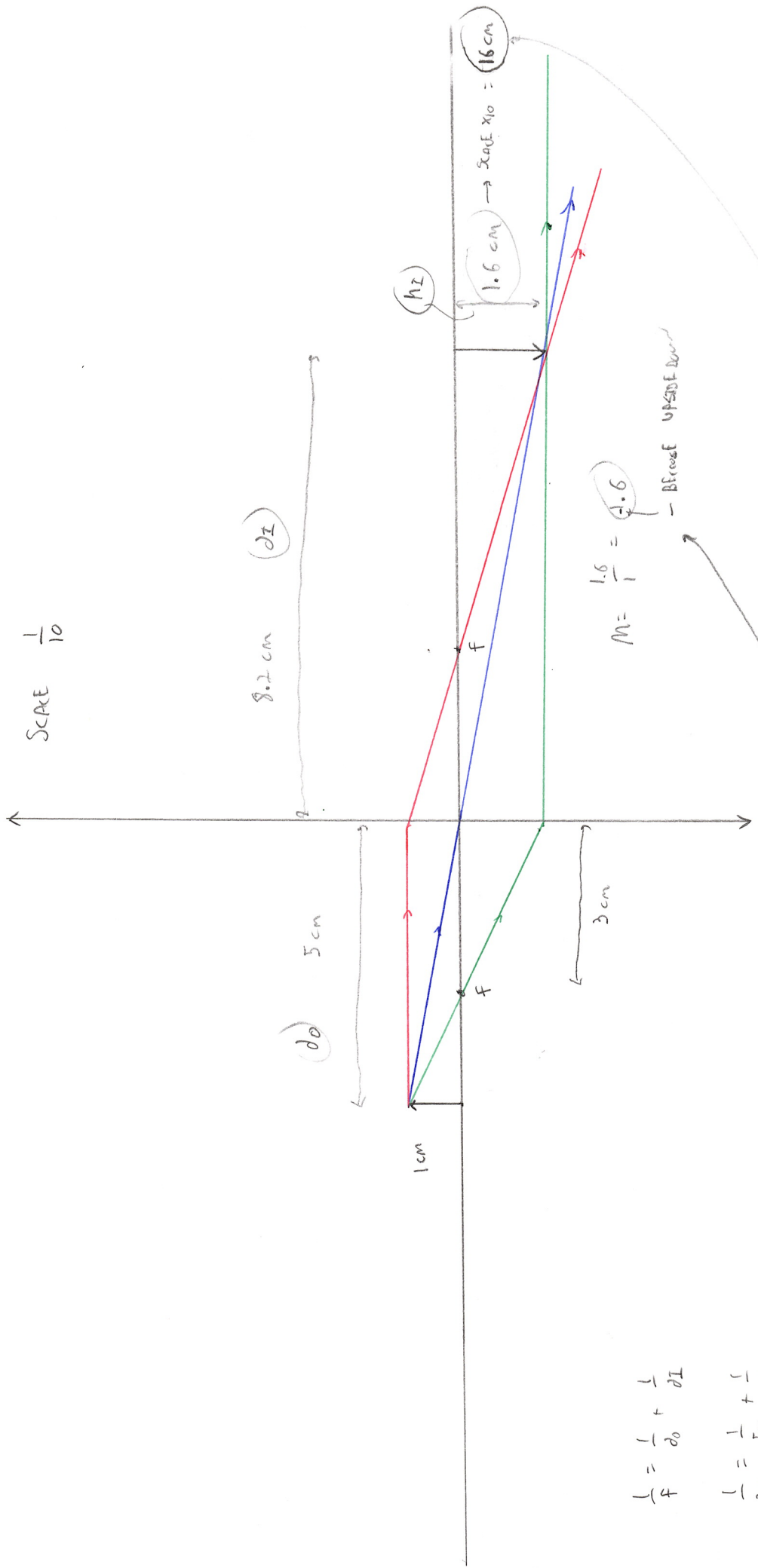


①



SCALE $\frac{1}{10}$

8.2 cm (dI)

1.6 cm → SCALE $\times 10 = 16$ cm

1.6

$m = \frac{1.6}{1} = 1.6$ — BROAD UPSIDE DOWN

PRETTY COOSE ✓
 BEEN MADE PERFECT
 COULD HAVE BEEN MADE
 SCHEMATIC DRAWINGS.
 WITH MY

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

$$\frac{1}{30} = \frac{1}{50} + \frac{1}{dI}$$

$dI = 75$ cm

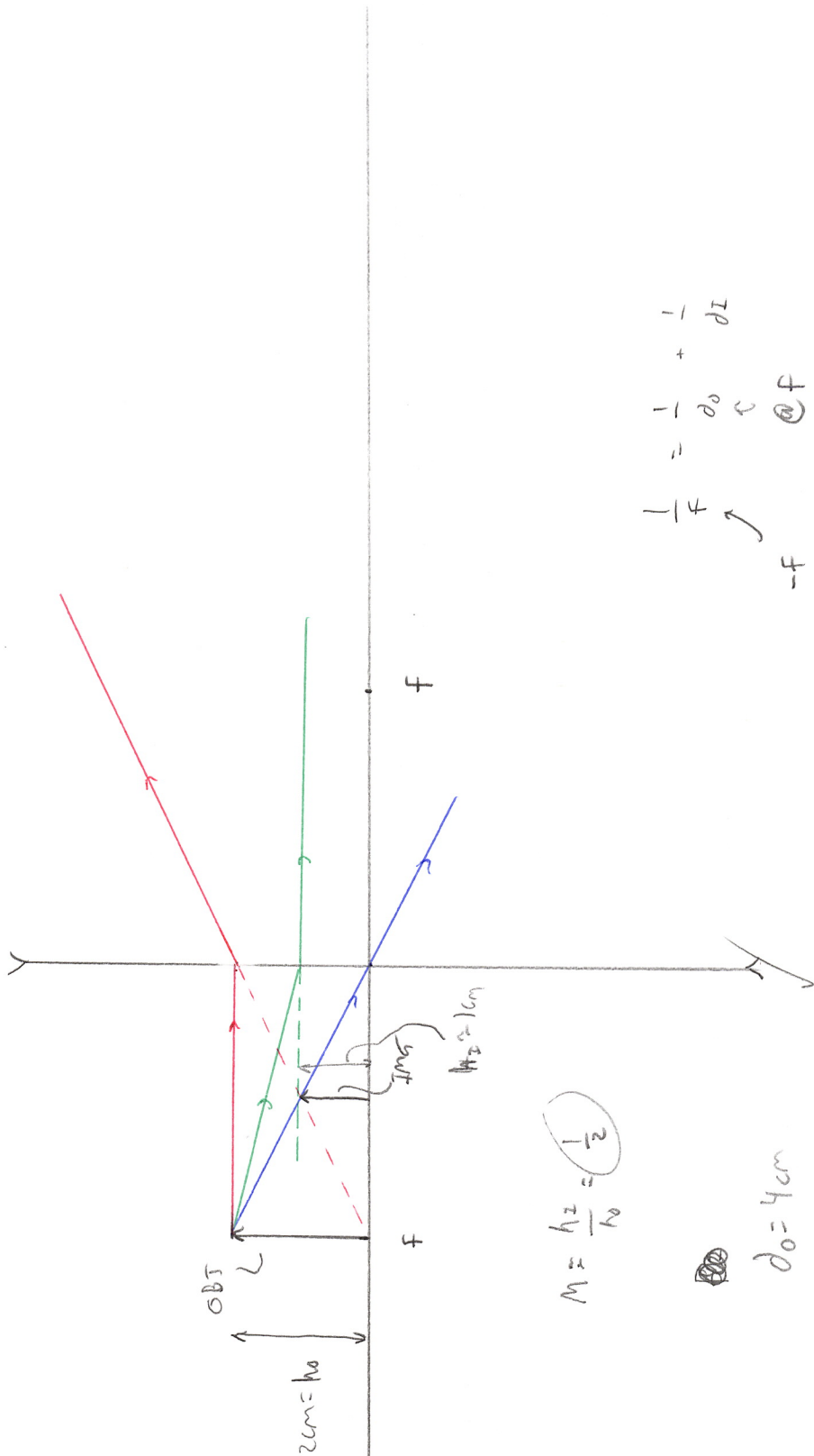
$m = -\frac{dI}{d_0} = -\frac{75}{50} = -1.5$

$\frac{hI}{h_0} = m$

$hI = h_0 m$

$hI = 15$ cm

(2)



$$M = \frac{h_i}{h_o} = \frac{1}{2}$$



$$d_o = 4\text{cm}$$

$$d_i = -2\text{cm}$$

↑ SAME SIZE, VIRTUAL,

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

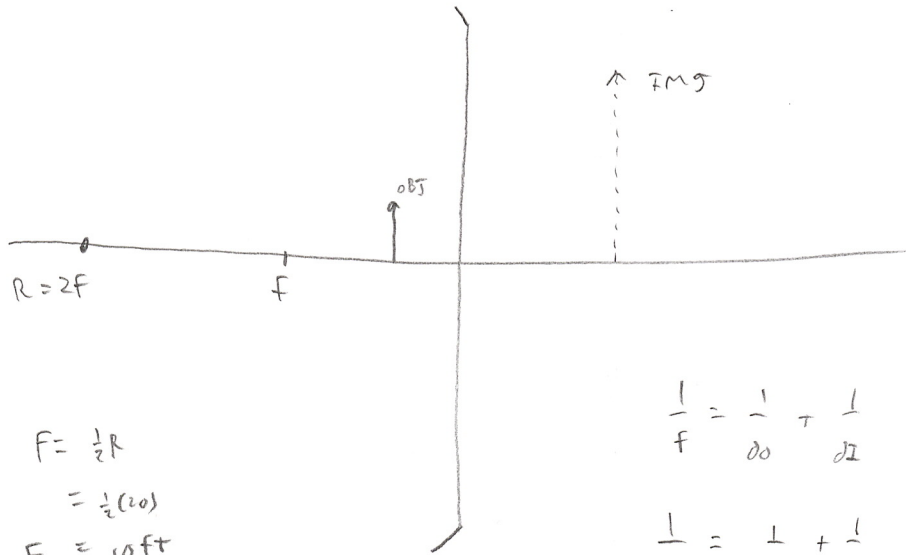
@ f

-f FOR DISTANCE
VERO

$$\frac{1}{-f} = \frac{1}{4} + \frac{1}{d_i}$$

$$-\frac{2}{f} = \frac{1}{d_i} \rightarrow d_i = -\frac{1}{2}f$$

③



$$F = \frac{1}{2}R$$
$$= \frac{1}{2}(20)$$
$$F = 10 \text{ ft}$$

$$\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i}$$
$$\frac{1}{10} = \frac{1}{6} + \frac{1}{d_i}$$

$$d_i = -15 \text{ ft}$$

Virtual img.
from obj.

$$M = \frac{-d_i}{d_o} = -\left(\frac{-15}{6}\right) = 2.5$$