

8.



$$f = 37 \text{ cm}$$

$$d_o = 14 \text{ cm}$$

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

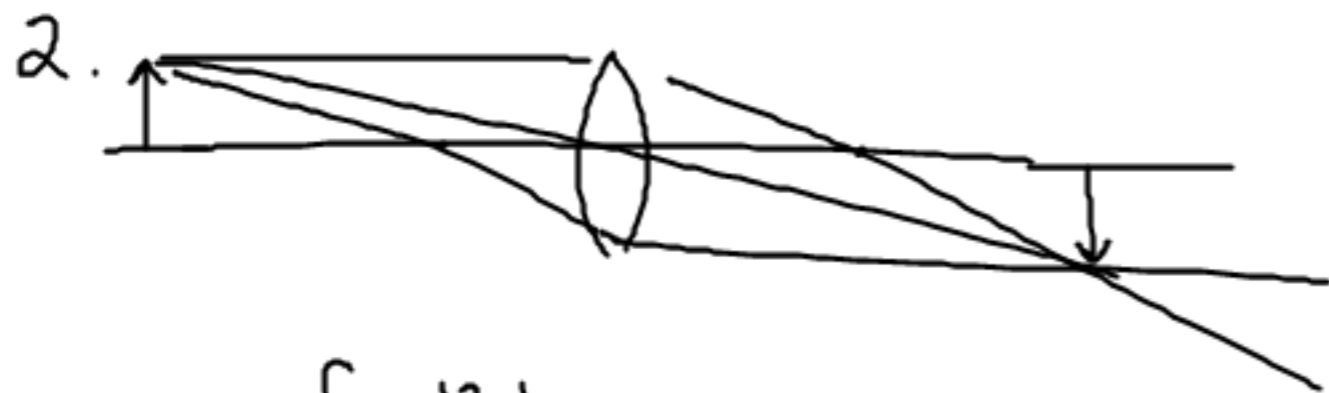
$$m = -\frac{d_i}{d_o}$$

$$\frac{1}{37} = \frac{1}{14} + \frac{1}{d_i}$$

$$m = \frac{22.5}{14}$$

$$m = 1.61 \times$$

$$d_i = -22.5 \text{ cm}$$



$$f = 12.1 \text{ cm}$$

$$d_o = 50 \text{ cm}$$

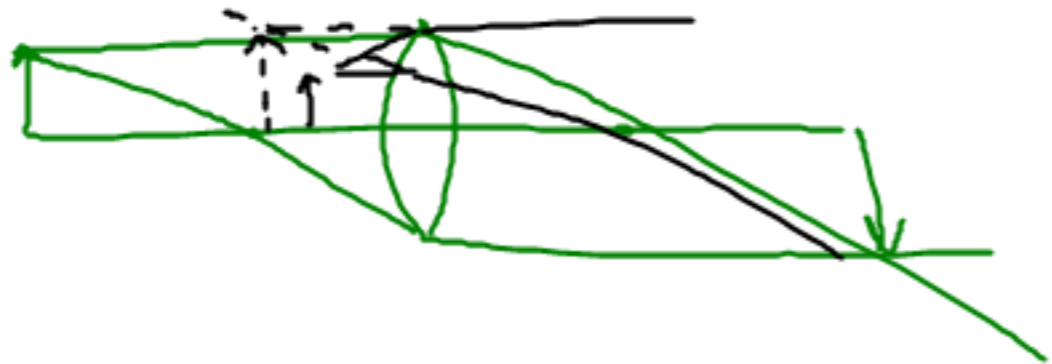
$$\frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i} \quad m = \frac{-d_i}{d_o}$$

$$\frac{1}{12.1} = \frac{1}{50} + \frac{1}{d_i} \quad m = -\frac{15.96}{50}$$

$$d_i = 15.0 \text{ cm}$$

$$m = -.319$$

10)



$$f = 23 \text{ cm}$$

$$\frac{1}{23} = \frac{1}{d_o} + \frac{1}{-1.7 d_o}$$

$$2) \quad m = -\frac{d_i}{d_o}$$

$$-2.3 = -\frac{d_i}{d_o}$$

$$2.3 d_o = d_i$$

$$b) \quad 1.7 = \frac{-d_i}{d_o}$$

$$1.7 d_o = -d_i$$

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

$$\frac{1}{23} = \frac{1}{d_o} + \frac{1}{2.3 d_o}$$

$$\frac{1}{23} = \frac{2.3}{2.3 d_o} + \frac{1}{2.3 d_o}$$

$$\frac{1}{23} = \frac{3.3}{2.3 d_o}$$