



$$\frac{1}{p_1} + \frac{1}{q_1} = \frac{1}{f_1}$$

$$\frac{1}{30} + \frac{1}{q_1} = \frac{1}{10} \quad q_1 = 15$$

$$18.5 - 15 = 3.5 \leftarrow \text{obj}$$

$$\frac{1}{p_2} + \frac{1}{q_2} = \frac{1}{f_2}$$

$$\frac{1}{3.5} + \frac{1}{q_2} = \frac{1}{5}$$

(b) $q_2 = -11.67 \text{ cm}$ to left lens 2)
(in front of

-1/2 forget
final
reciprocal

final height = original height $\times \frac{q_1}{p_1} \times \frac{q_2}{p_2} = 1.45 \times \frac{15}{30} \times \frac{11.67}{3.5} = 2.42 \text{ cm}$ (c)

- .25 if magnification
instead of height