

⑤ $f_1 = 12$ $f_2 = 6$ $D = 22$ obj. height = 1.65
 $P_1 = 36$

$$\frac{1}{P_1} + \frac{1}{q_1} = \frac{1}{f_1} \quad \frac{1}{36} + \frac{1}{q_1} = \frac{1}{12} \quad q_1 = 18$$

$$P_2 = D - q_1 = 4$$

$$\frac{1}{P_2} + \frac{1}{q_2} = \frac{1}{f_2} \quad \frac{1}{4} + \frac{1}{q_2} = \frac{1}{6} \quad q_2 = -12 \text{ cm}$$

12 cm (in front of,
to the left of the 6 cm
lens)

$$h_{\text{final}} = \frac{q_1 q_2 h_{\text{obj}}}{P_1 P_2} = \frac{(18)(12)(1.65)}{(36)(4)} = \underline{\underline{2.475 \text{ cm}}}$$

height of final

