48. (a) (b) (c) and (d) Our first step is to form the image from the first lens. With $p_1 = 3$ cm and $f_1 = +4$ cm, Eq. 35-9 leads to

$$\frac{1}{p_1} + \frac{1}{i_1} = \frac{1}{f_1} \quad \Longrightarrow \quad i_1 = -12 \text{ cm} .$$

The corresponding magnification is $m_1 = -i_1/p_1 = 4$. This image serves the role of "object" for the second lens, with $p_2 = 8 + 12 = 20$ cm, and $f_2 = -4$ cm. Now, Eq. 35-9 leads to

$$\frac{1}{p_2} + \frac{1}{i_2} = \frac{1}{f_2} \quad \Longrightarrow \quad i_2 = -3.33 \text{ cm}$$

with a corresponding magnification of $m_2 = -i_2/p_2 = 1/6$, resulting in a net magnification of $m = m_1 m_2 = 2/3$. The fact that m is positive means that the orientation of the final image is the same as the (original) object. The fact that i_2 is negative means that the final image is virtual (and therefore to the left of the second lens).