

20. (a) We use Eq. 35-10:

$$f = \left[ (n - 1) \left( \frac{1}{r_1} - \frac{1}{r_2} \right) \right]^{-1} = \left[ (1.5 - 1) \left( \frac{1}{\infty} - \frac{1}{-20 \text{ cm}} \right) \right]^{-1} = +40 \text{ cm} .$$

(b) From Eq. 35-9,

$$i = \left( \frac{1}{f} - \frac{1}{p} \right)^{-1} = \left( \frac{1}{40 \text{ cm}} - \frac{1}{40 \text{ cm}} \right)^{-1} = \infty .$$