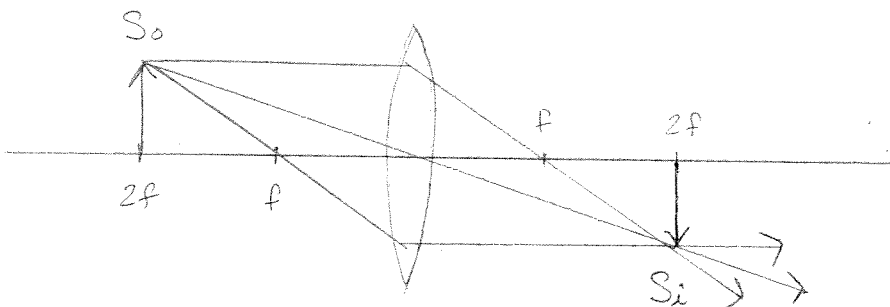


P #29 a/b

Ch 23 - pg 743

a) $f = 20\text{cm}$
 $S_o = 40\text{cm}$



$$\frac{1}{S_o} + \frac{1}{S_i} = \frac{1}{f}$$

$$M = -\frac{S_i}{S_o}$$

Real, Inverted

$$\frac{1}{40} + \frac{1}{S_i} = \frac{1}{20}$$

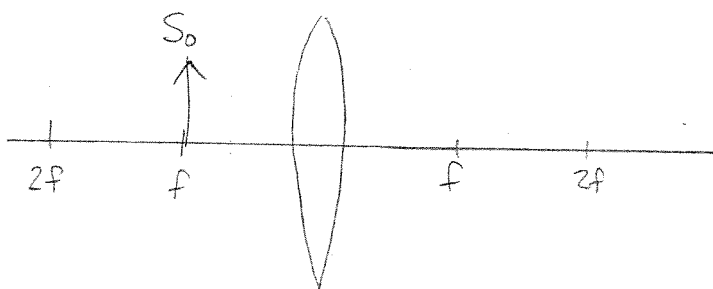
$$= -\frac{40\text{cm}}{40\text{cm}}$$

$$S_i^{-1} = 20^{-1} - 40^{-1}$$

$$M = -1$$

$$S_i = 40\text{cm}$$

b) $f = 20\text{cm}$
 $S_o = 20\text{cm}$



$$\frac{1}{S_o} + \frac{1}{S_i} = \frac{1}{f}$$

No image forms

$$\frac{1}{20} + \frac{1}{S_i} = \frac{1}{20}$$

$$S_i^{-1} = 20^{-1} - 20^{-1}$$

$$S_i^{-1} = 0$$

$$S_i = \infty$$