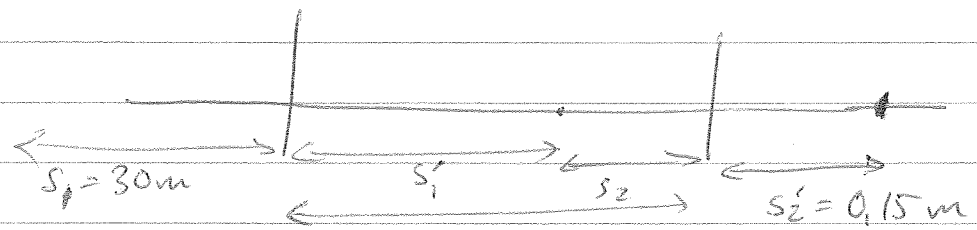
PPP
3-19 | a) $m = \frac{h_i}{h_0} = -\frac{s'}{s}$

Gauss $s' = \frac{1}{\frac{1}{f} - \frac{1}{s}} = \frac{1}{\frac{1}{0{,}15\,m} - \frac{1}{30\,m}} = 0{,}15\,m$

$m = -\frac{0{,}15}{30} = -0{,}005$

$h_i = -m h_0 = -0{,}005 \cdot 6\,\text{fot} = -0{,}03\,\text{fot} = -0{,}90\,cm$

b) $f_1 = 12\,cm$ $\quad f_2 = ?$



Gauss $s_1' = \frac{1}{\frac{1}{f_1} - \frac{1}{s_1}} = \frac{1}{\frac{1}{0{,}12} - \frac{1}{30}} = 0{,}12\,m$

$s_2 = d - s_1' = -4\,cm$

$\frac{1}{s_2} + \frac{1}{s_2'} = \frac{1}{f_2} \Rightarrow f_2 = \frac{1}{\frac{1}{s_2} + \frac{1}{s_2'}} = \frac{1}{\frac{1}{-4} + \frac{1}{0{,}15}}$

$= -5{,}45\,cm$

$M = M_1 M_2 = \frac{s_1'}{s_1} \frac{s_2'}{s_2} = \frac{0.12}{30} \cdot \frac{15}{-4} = -0.015$

$= 3$ ggr some.