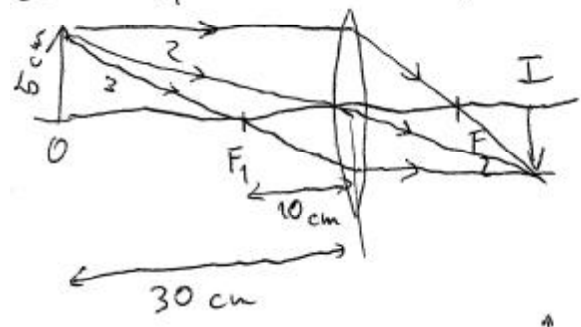


Ex. 1

2) Lenses - examples



- 1, construction → 3 rays
- 2, calculations

$$\frac{1}{30} + \frac{1}{q} = \frac{1}{10}$$

$$q = 15 \text{ cm}$$

$$M = \frac{-q}{p} = \frac{-15}{30} = -0,5$$

$$\frac{h'}{h} = M \quad ; \quad \frac{h'}{5} = -0,5$$

$$h' = -2,5 \text{ cm}$$

$$\frac{1}{p} + \frac{1}{q} = \frac{1}{f}$$

$$M = \frac{h'}{h} = \frac{-q}{p}$$

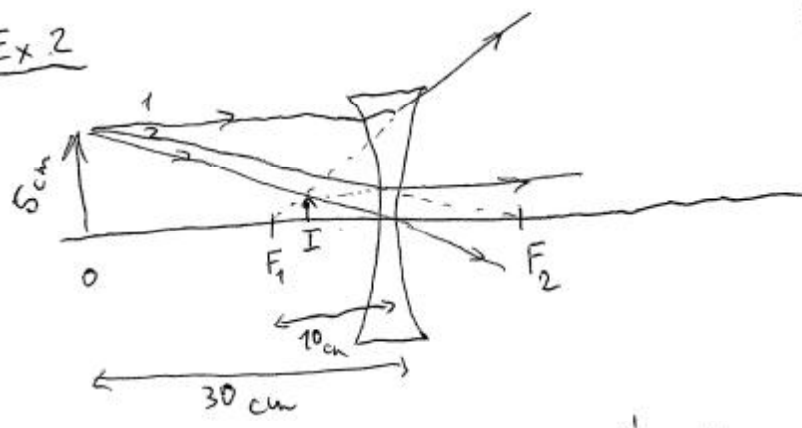
sign conventions		
	In front	I back
p	+	-
q	-	+
	convergent	divergent
f	+	-

Ex 3. Draw and calculate: (8 p.)

a) p = 12 cm
M = 0,3
h' = 2 cm

b) h' = 8 cm
h = 4 cm
q = -10 cm

Ex 2



$$\frac{1}{30} + \frac{1}{q} = \frac{1}{-10}$$

divergent

$$q = -7,5 \text{ cm}$$

$$M = \frac{-q}{p} = \frac{7,5}{30} = 0,25$$

$$\frac{h'}{h} = M$$

$$\frac{h'}{5} = 0,25$$

$$h' = 1,25 \text{ cm}$$