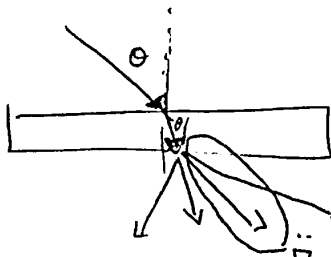


Py 202

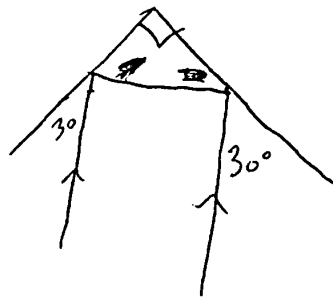
Quiz

x =
1)



bc air on one side
and air on other

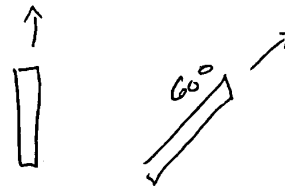
2)



90°??? ✓

bc it's a reflector.

3)



Midterm Next Wednesday

- there's an LC problem!
- there's also a mirror/lens problem
- 2 problems in between

$$I = \frac{1}{2} \cos^2(60^\circ) I_0$$

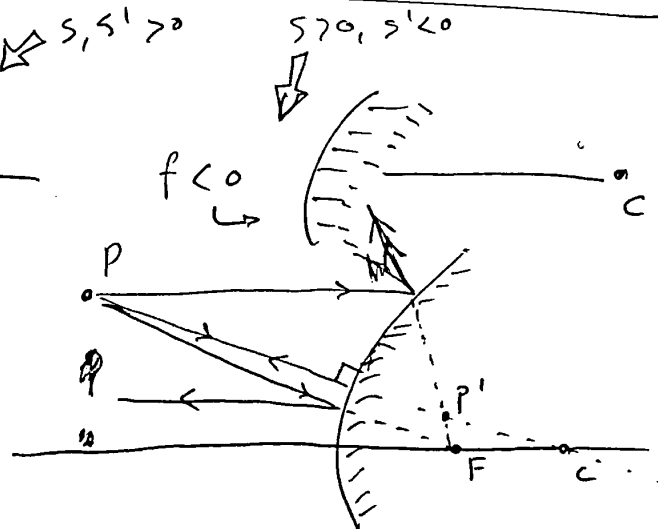
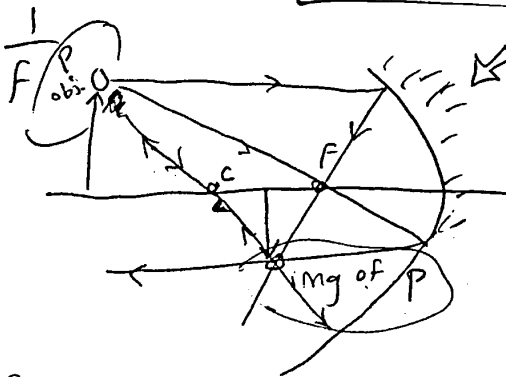
$$= 0.5 (\cos(60^\circ))^2 = 0.125$$

$$= 12.5\%$$

Mirrors

$$\frac{1}{s} + \frac{1}{s'} = \frac{1}{f}$$

$$f = \frac{r}{2}$$

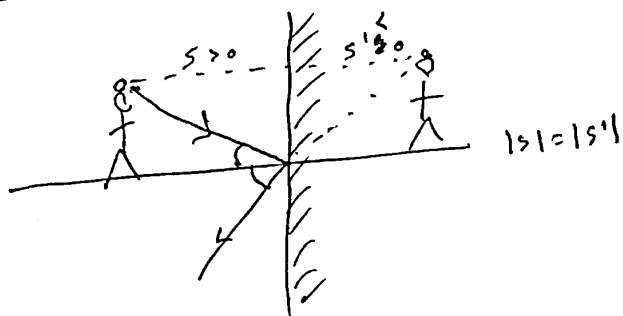


- parallel ray
- focal ray
- central ray

$$M = \frac{y'}{y} = -\frac{s'}{s}$$

Sign convention for mirrors

	+	-
S	Same side as incident light	
S'	"real image": Same side as reflected light	"virtual image": back side of mirror (non-reflecting)
r, f	Center of circle is on reflecting side of mirror Concave	Center of circle is on the backside of mirror Convex



ex) given ~~$f = 10$~~

Conv mirror, $f \text{ len} = 10$,
 $S = 30$:

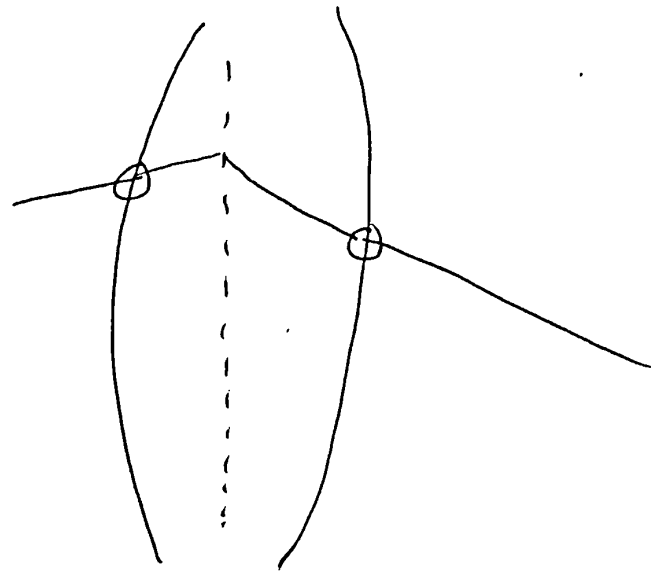
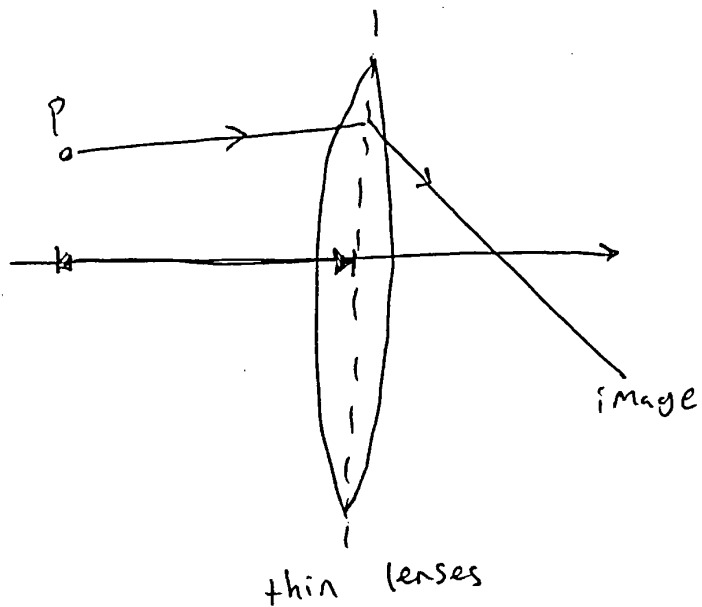
$$f = -10,$$

$$S' = \left(\frac{1}{f} - \frac{1}{S} \right)^{-1}$$

$$= \ominus 7.5$$

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

S	S' concave	S' convex
$S = \infty$		
outside of C $S > 2F$		
between C and f $f < S < 2f$		
$S = f$		
$S < f$		



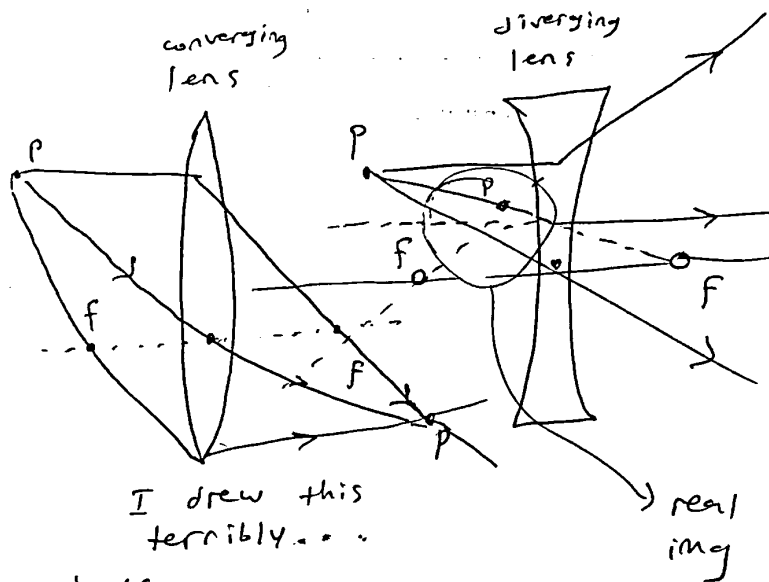
lenses

$$\frac{1}{s} + \frac{1}{s'} = \frac{1}{f}$$

Power of lens: $P = \frac{1}{f}$

units: diopters $[M^{-1}]$

$$M = \frac{y'}{y} = -\frac{s'}{s}$$



Sight: correcting near-/far-sightedness