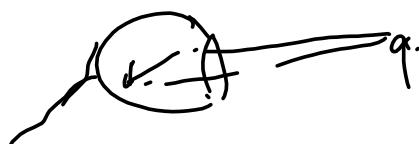
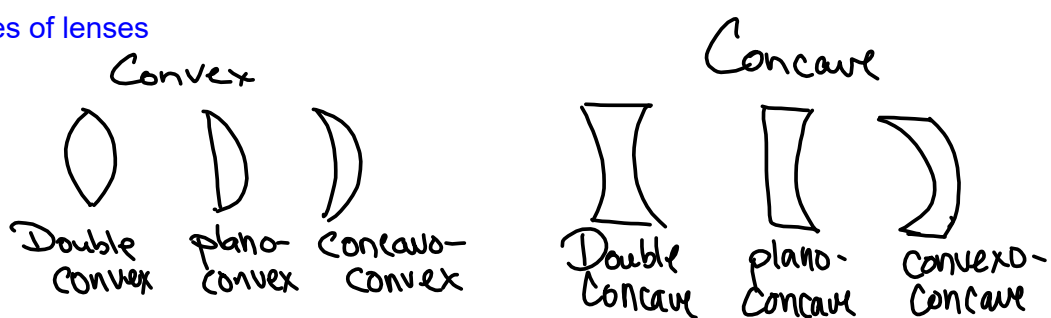


## Lenses

Similar to mirrors - same equation, similar behaviour

Refraction instead of reflection

### Shapes of lenses



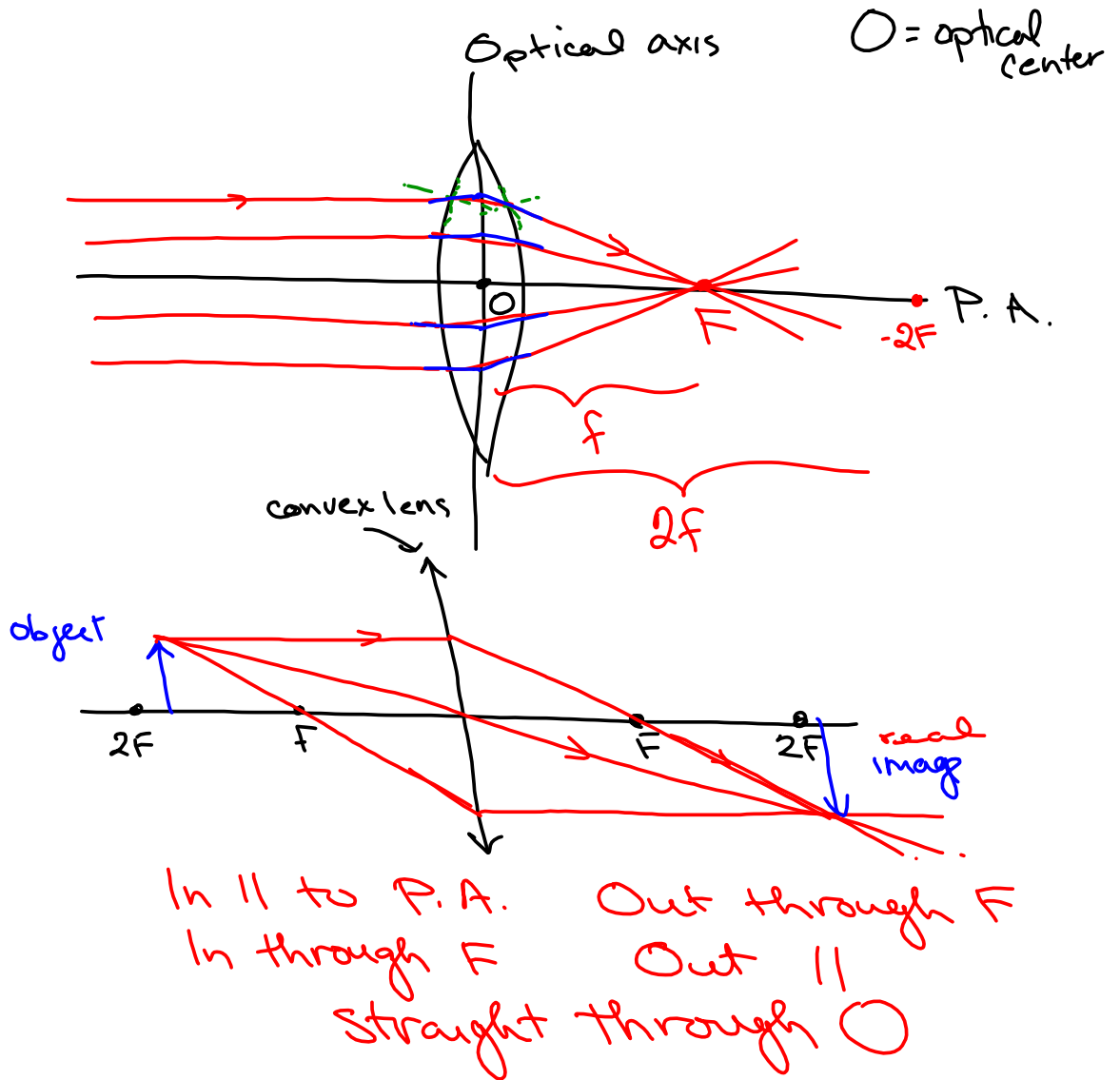


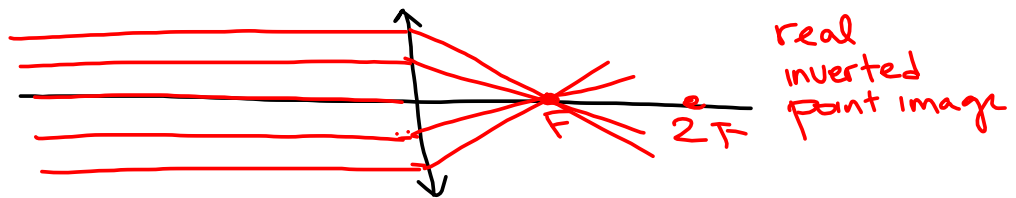
Table 1.2: Conventions for Lenses

Quantity	+	-
$d_o, d_i$	real	virtual
$f$	convex	concave
$h_o, h_i$	erect	inverted
$m$	erect	inverted

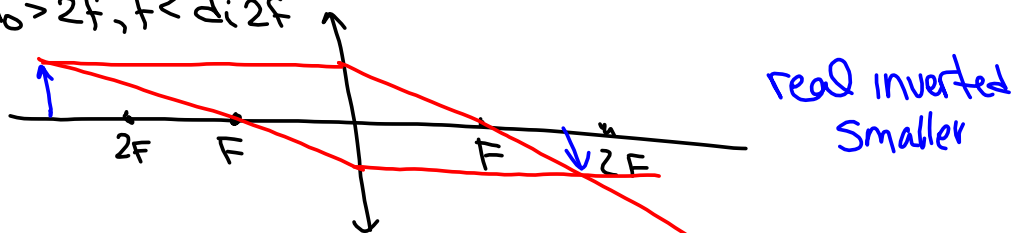
← opposite of mirrors

Convex Lens (converging lens - similar to concave mirror)

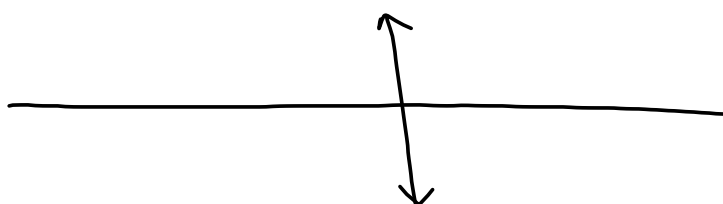
Case 1  $d_o = \infty$   $d_i = f$



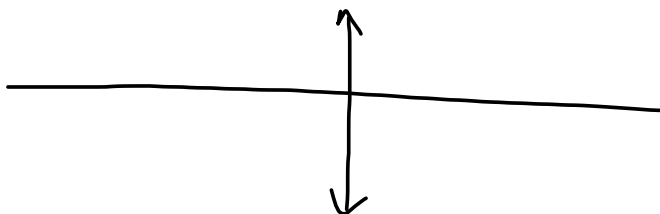
Case 2  $d_o > 2f, f < d_i < 2f$



Case 3  $d_o = 2f, d_i = 2f$

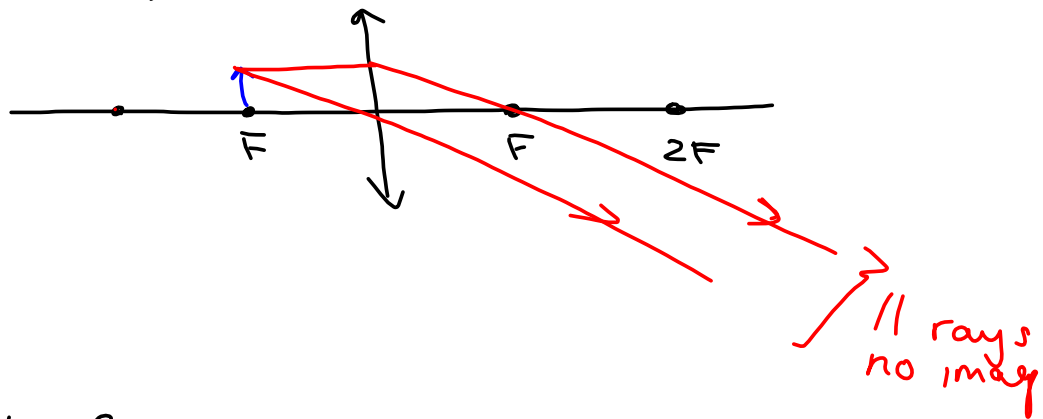


Case 4  $f < d_o < 2f, d_i > 2f$



Case 5

$$d_o = f, d_i = \infty$$

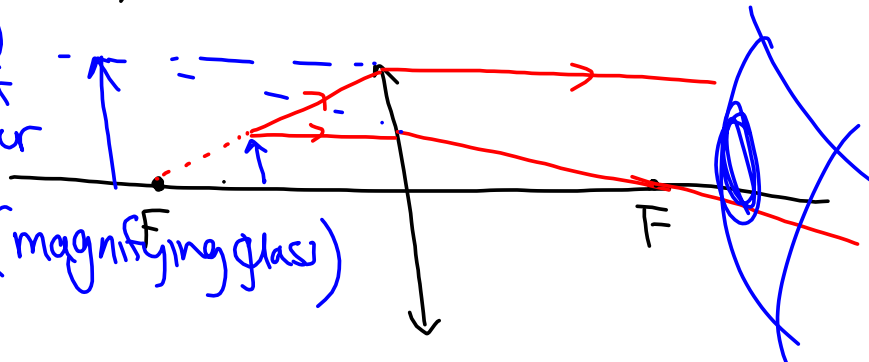


Case 6

$$d_o < f$$

virtual  
erect  
larger

(magnifying glass)



Concave Lens

Case

