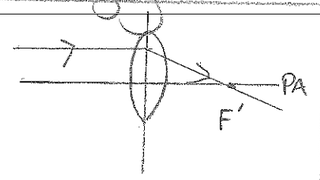
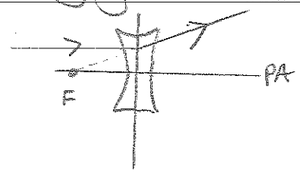
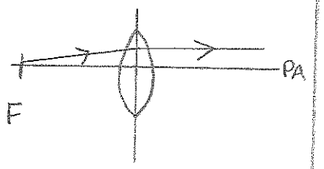
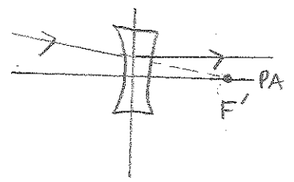
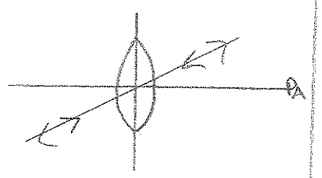
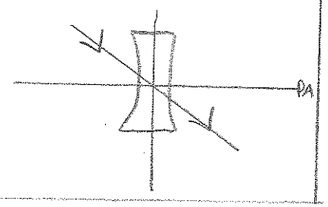
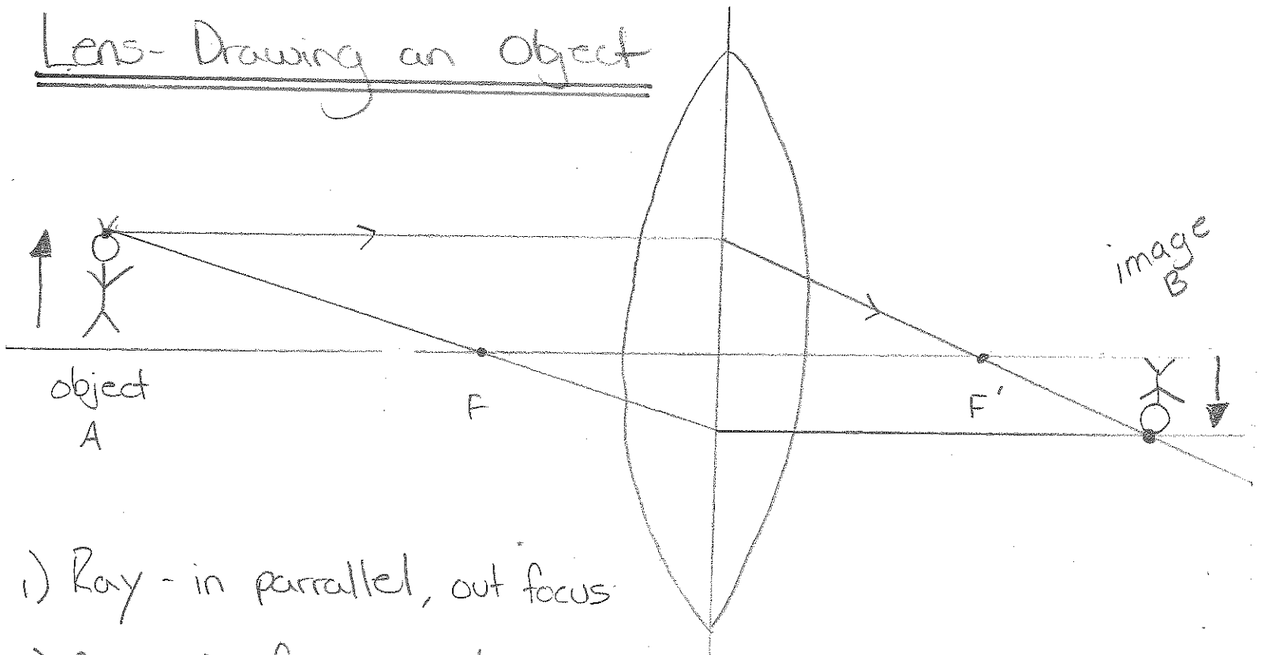
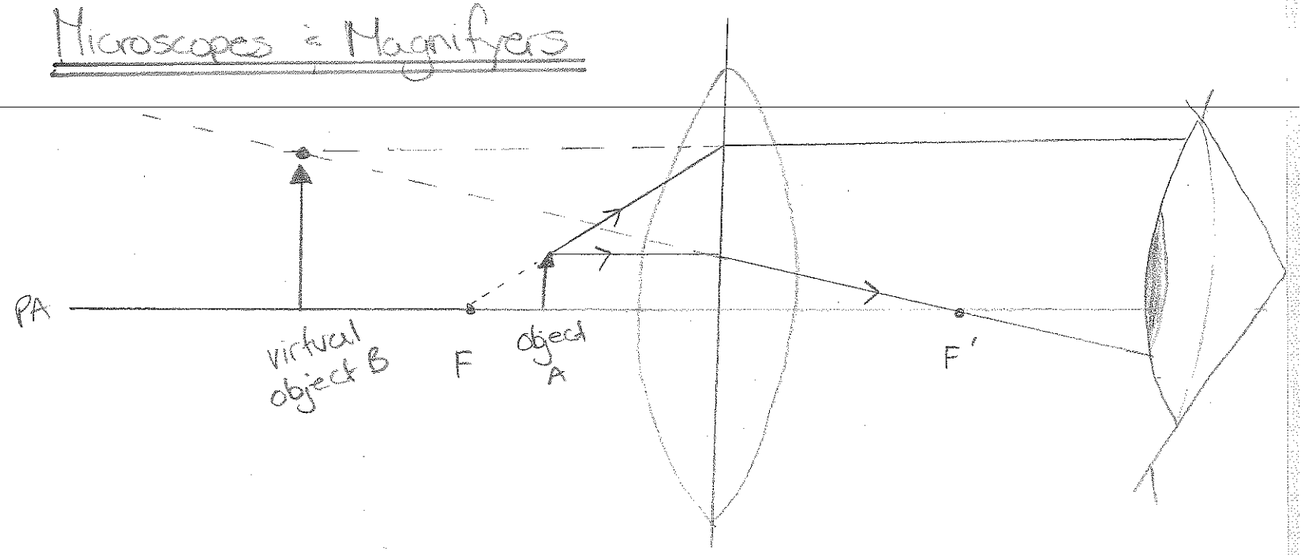
Ray Description	Converging Lens	Diverging Lens
• arrive parrallel		
• arriving thru ≠ focus		
• arriving thru ≠ centre		

Lens- Drawing an Object



1) Ray - in parrallel, out focus
2) Ray - in focus, out parrallel
3) image formed where 1 & 2 cross

Microscopes & Magnifyers



* 1) object placed inside principal focus
2) results in an enlarged, erect [upright], virtual image

Lens Equation = Mirror Equation

$$\frac{1}{d_o} + \frac{1}{d_i} = \frac{1}{f}$$

Ex: A convex lens has a focal length 50.0 mm. How far from the lens will the image form of an object that is 5.0 m away?

$f = 50\text{mm} \rightarrow 0.05\text{m}$

$d_i = ?$

$d_o = 5\text{m}$

$\frac{1}{5} + \frac{1}{d_i} = \frac{1}{0.05}$

$\frac{1}{d_i} = \frac{1}{0.05} - \frac{1}{5}$

$\frac{1}{d_i} = 19\frac{4}{5}$ or 19.8 → $\frac{1}{19.8}\ m = d_i$ ← more accurate

or $0.05\overline{5}$ ok

know Algebra *

Physics 11
7.6 Optics

Review

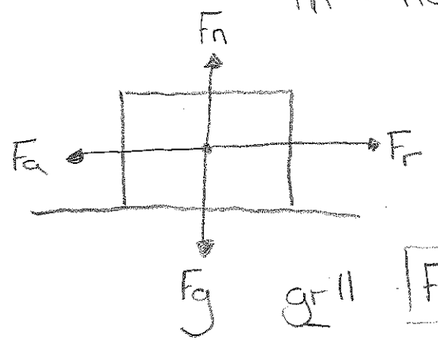
Friction - The force of friction is the force that is opposing the motion

Static Friction - block of wood is stationary on an inclined table

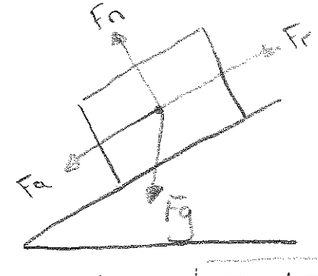
Kinetic Friction - Friction force between 2 flat surfaces sliding over each other

$F_f = \mu F_n$ μ = coefficient of friction

F_n = normal force



gr ⏥ $F_n = F_g = mg$



g ↗ $F_n \neq F_g$

New

Lenses - from the Latin "*lentil*"

convex → converging → rays come together

concave → diverging → rays spread out