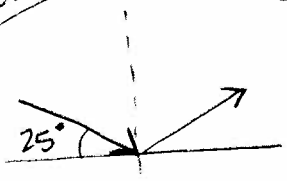


# Mirrors

## Reflection of Light

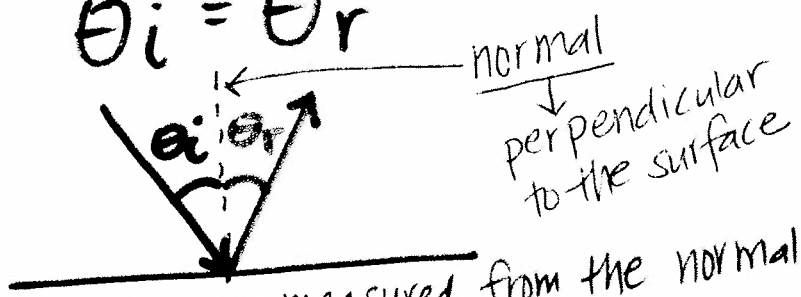
- Law of Reflection: angle of incidence,  $\theta_i$ , equals the angle of reflection,  $\theta_r$

Reflections  
Sublevel 1 (ex)



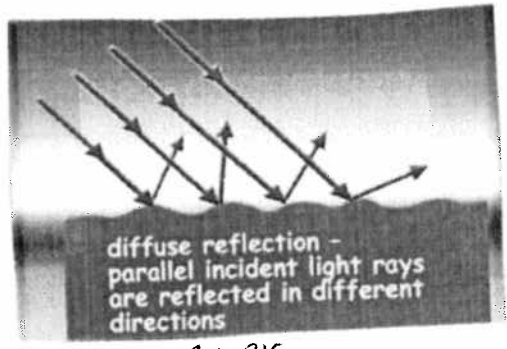
$\theta_r = ?$   
answer =  $65^\circ$

$$\theta_i = \theta_r$$



$\theta_i$  &  $\theta_r$  are measured from the normal!

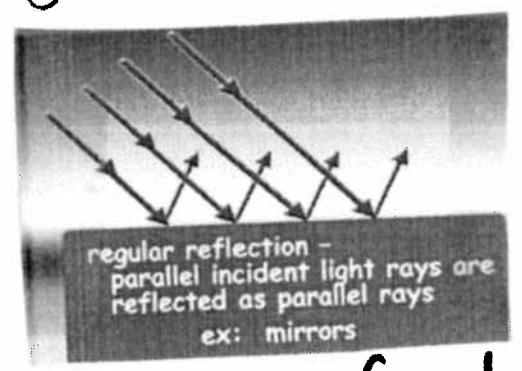
## Diffuse reflection vs. regular reflection



ex: paper

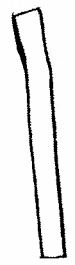
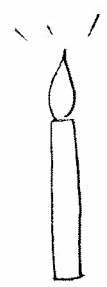
rough surface!

Law of Reflection is obeyed for each!

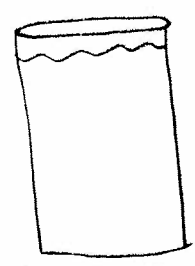


smooth surface!

Looking through the glass, an image of the candle can be seen & appears to be burning inside the water.



glass

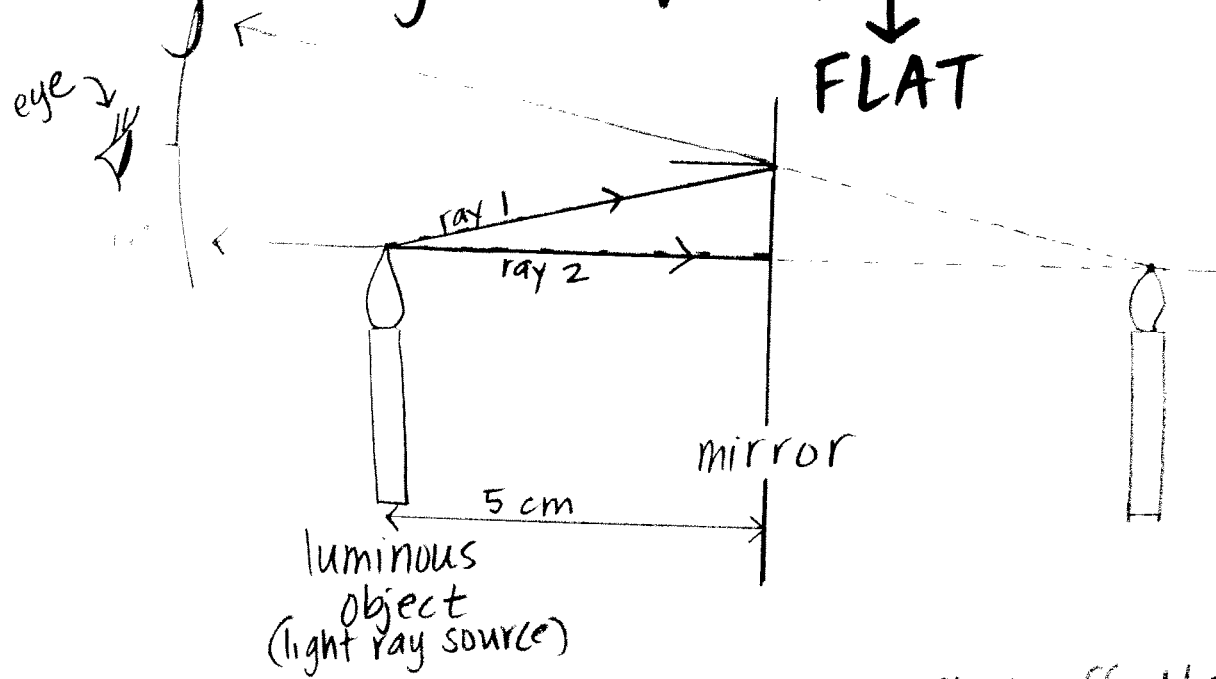


beaker of water

A virtual image forms  
↓  
formed in your mind

Video 1401: 4:18-4:53

# • Ray diagram for plane mirrors



Your brain extends the reflected rays backwards and forms the image where they meet

- ① Light rays go from the object, reflect off the mirrors, to your eyes
- ② The image is formed where the reflected rays converge  
 ↓  
 "meet"  
 - our mind converges them  
 - the reflected rays appear to diverge from there

## Plane mirror Images:

- virtual - formed by rays that only appear to converge
- appear behind mirror (same distance)
- same size as object
- erect
- reverse left & right

\* Note: An observer at a different location will sight along different lines but at the same image location.

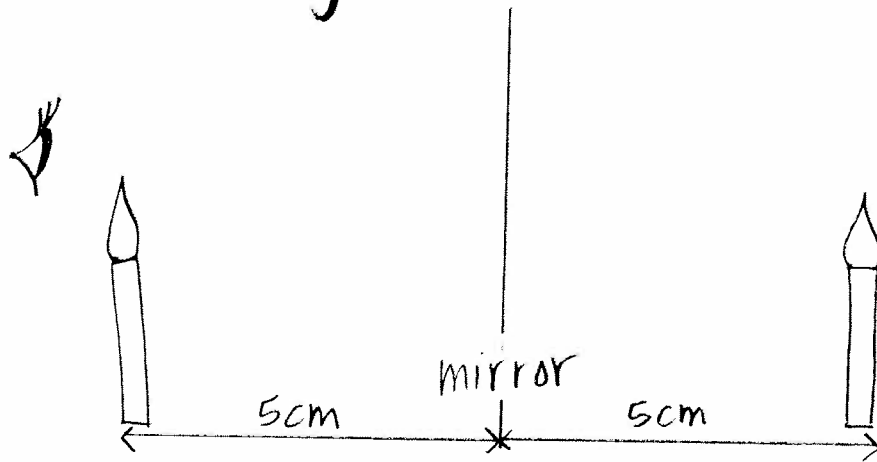
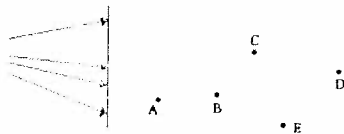


Image location depends on object only (not observer!)

## Reflection & Mirrors Sublevel 2 ex #1

The diagram below depicts the path of four incident rays emerging from an object and approaching a mirror. Five lettered locations are shown on the opposite side of the mirror. Which location is representative of the image location?



(C)

## Sublevel 2 ex #2

JEN ← OBJECT  
\_\_\_\_\_  
MIRROR  
JEN IMAGE?

