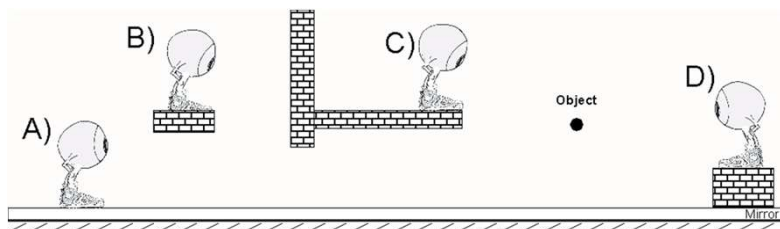


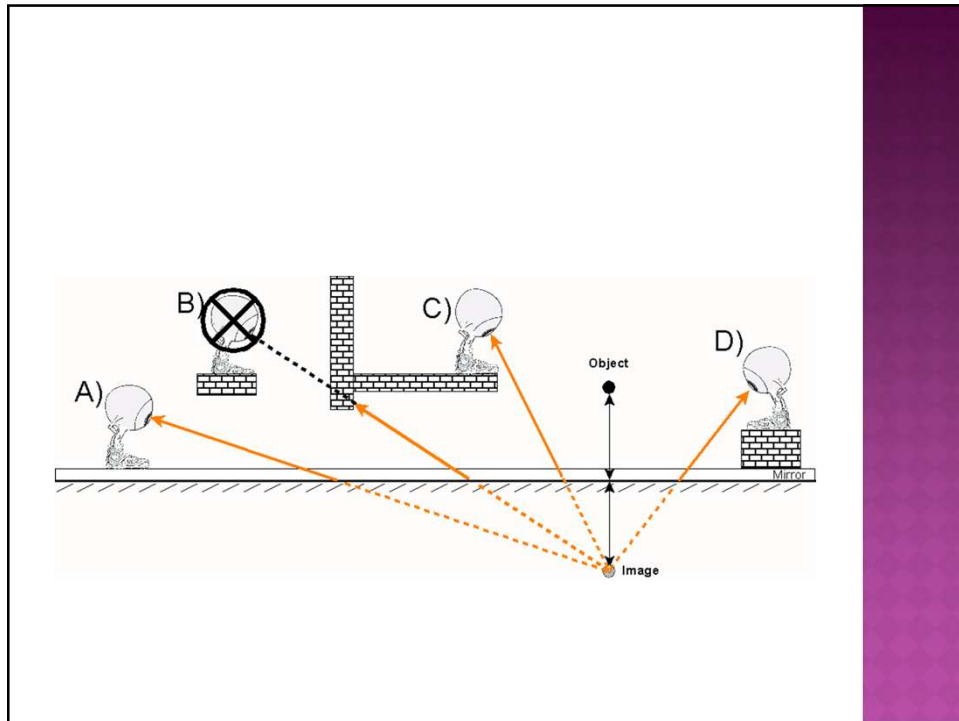
# PLANE MIRRORS

Day 2!!!!!!

## FROM LAST DAY

- ◉ Which eyeNsteins can see the image?





## FROM LAST DAY

- Anna Litical is doing the Plane Mirror Lab in physics class. She places a pin a distance of 4.9 cm from a plane mirror. How far behind the mirror can the image be expected to appear?

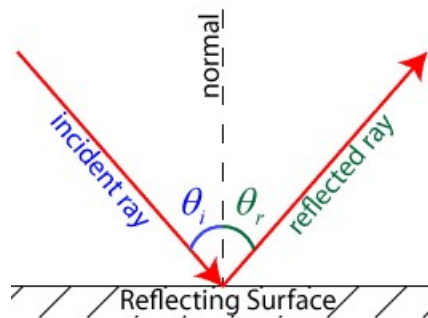
The image will be 4.9cm away!

## TRY THIS

- Work through the Law of Reflection Lab handout

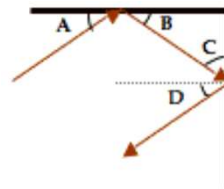
## THE LAW OF REFLECTION

- The angle the ray comes into the mirror with will be equal to the angle the ray leaves with
- $\theta_i = \theta_r$



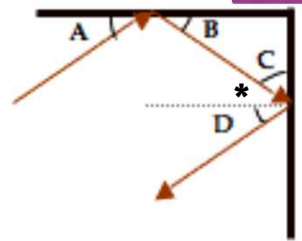
## PRACTICE

- ◉ In a physics lab, Ray Zuvlite arranges two mirrors with a right angle orientation as shown. Ray then directs a laser line at one of the mirrors. The light reflects off both mirrors as shown. If angle A is  $38^\circ$ , then what is the angle measure of angles B, C, and D?



## RAY ZUVLITE ANSWER

- ◉ A and B must be equal because  $\theta_i = \theta_r$
- ◉ B and C add to  $90^\circ$  because of the right angle triangle
- ◉ C and \* add to  $90^\circ$  because they are complimentary
- ◉ D and \* are equal because  $\theta_i = \theta_r$



## TRY THIS

- ◉ Grab two plane mirrors, a protractor and an object
- ◉ Place the mirrors at  $180^\circ$ . Place the object in front of the mirror. How many images do you see?
- ◉ Place the mirrors at  $90^\circ$ . Place the object in front of the mirrors. How many images do you see?
- ◉ Keep moving the mirrors in until you see 4, images, then 5, then 6, then 7, and so on until you cannot reduce the angle anymore.

## DESCRIBING THE IMAGE

- ◉ We can characterize the 4 key changes to an image using the acronym SALT
  - S is for SIZE (larger, same, smaller)
  - A is for ALTITUDE (upright, inverted)
  - L is for LOCATION (behind or in front of mirror)
  - T is for Type (real, virtual)
- ◉ Or you can use LOST\*\*
  - Location, Orientation, Size and Type

\*\* You choose, you need 4 key pieces!!!

