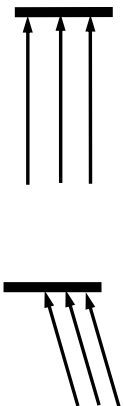


Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Physics**  
**Reflection of Light**  
**Lab: Blackboard Optics**

**Part One: Plane Mirrors**

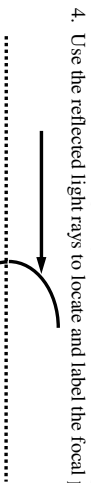
1. Show the reflected rays for the indicated incident rays.



2. Where would this type of mirror be found?

**Part Two: Convex (Diverging) Mirrors**

3. Show the reflected light rays for the indicated incident light rays.

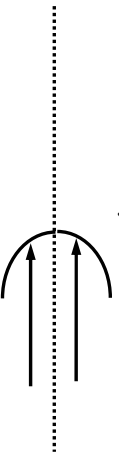


5. Locate the image that would be formed by the flame of a candle (light source) placed at the following position.

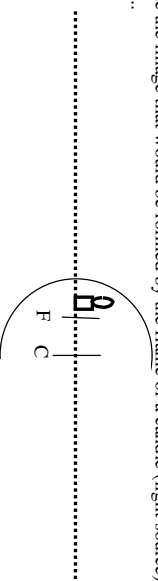
6. Where would this type of mirror be used and why?

**Part Three: Concave (Converging) Mirrors**

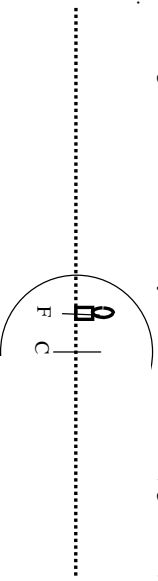
7. Use the indicated incident rays to locate and label the focal point and center of curvature of this mirror.



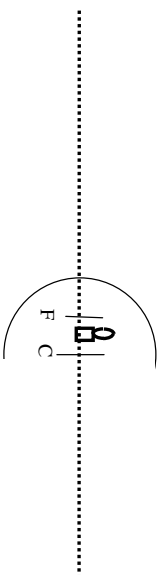
8. Locate the image that would be formed by the flame of a candle (light source) placed at the following position.



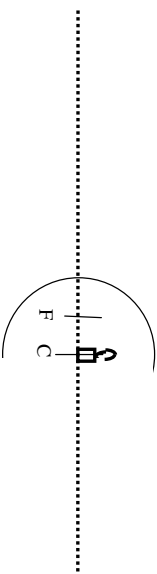
9. Locate the image that would be formed by the flame of a candle (light source) placed at the following position.



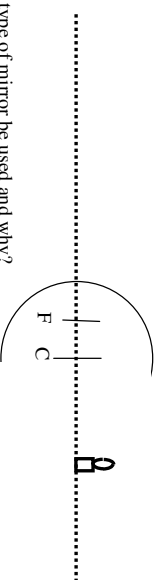
10. Locate the image that would be formed by the flame of a candle (light source) placed at the following position.



11. Locate the image that would be formed by the flame of a candle (light source) placed at the following position.



12. Locate the image that would be formed by the flame of a candle (light source) placed at the following position.



13. Where would this type of mirror be used and why?

**14. Summary of Mirror Characteristics**

Mirror Type	Object Location	Image Type	Image Orientation	Image Size	Image Location	F	$d_i$	$d_o$	$h_i$	$h_o$	M
Any	Any										
Convex	Any										
Concave	Inside F										
Concave	At F										
Concave	Between F & C										
Concave	At C										
Concave	Beyond C										

**Sign Conventions:**

- $f$  = Focal Length
  - $d_i$  = Image Distance
  - $d_o$  = Object Distance
  - $h_i$  = Image Height
  - $h_o$  = Object Height
  - $M$  = Magnification
- + Concave Mirror  
 + Real Images (in front of mirror)  
 + All (always placed in front of mirror)  
 + Virtual Image (upright)  
 + All (always upright)  
 + Virtual Image  
 Magnitude of magnification < 1 smaller
- Convex Mirror  
 - Virtual Images (behind mirror)  
 - Real Image (inverted)  
 - Real Image  
 = 1 same size