Name: _____ Hour: _____

Images, Images, Images!

Purpose: to determine the path light takes to your eye in order to form an image.

Grading: Submit this page with a ray diagram on the back. No other write-up is required.

1. Place one plane mirror, held upright by its supports, in the middle of the paper on your table. Place an upright pencil (the "object") in front of the mirror.
2. Place the second pencil behind the mirror such that everywhere you look it aligns with the image in the mirror. When you have the "image" pencil properly positioned, it will line up with the image in the mirror from any line of sight.
3. Carefully (without bumping or moving any of the objects) outline in pencil the positions of the mirror (use the back of the mirror) and pencils. Draw one location of your eye. Remove all items from the paper.
4. Draw a dashed line for the path that light appears to take from the image (center of circle) to your eye.
5. Draw a solid line representing the path light takes from the object pencil (center of circle) to the mirror to your eye.
6. Measure AND label the following on your ray diagram: 1) object and image distances and 2) angles of incidence and reflection.

Object Distance (cm)	**Image Distance** (cm)	**Angle of Incidence** (°)	**Angle of Reflection** (°)

7. Set 2 mirrors at right angles (90°) to each other. Place a pencil midway between the mirrors.
8. How many images do you see? _____
9. Decrease the angle between mirrors until you see another full image. Continue to do this.
10. What is the maximum number of images that you can create with your two mirrors? _____
    What is the angle between the mirror in order to create the max number of images? _____

Results:

- Was is the % difference between your object distance and image distance? (Show your work.)

- What is the % difference between your angle of incidence and angle of reflection? (Show your work.)

Discussion:

List and briefly explain two measurement errors that might have contributed to your % differences.