

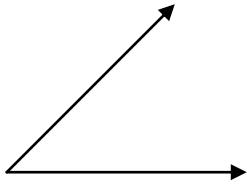
Reflection Problem Set

Name: _____

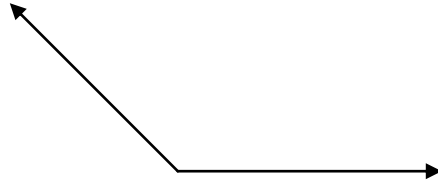
Date: _____ Block: _____

Measure the following angles below

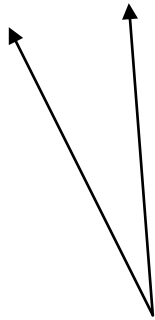
1)



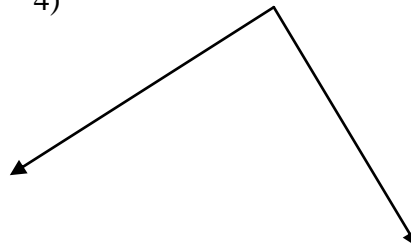
2)



3)

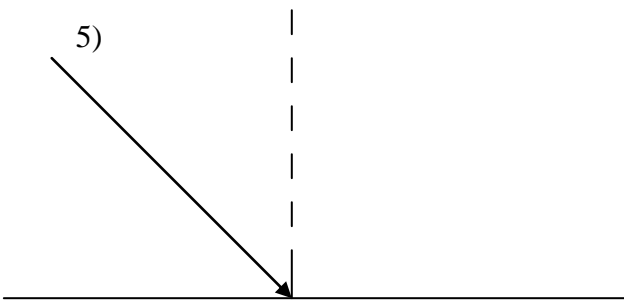


4)



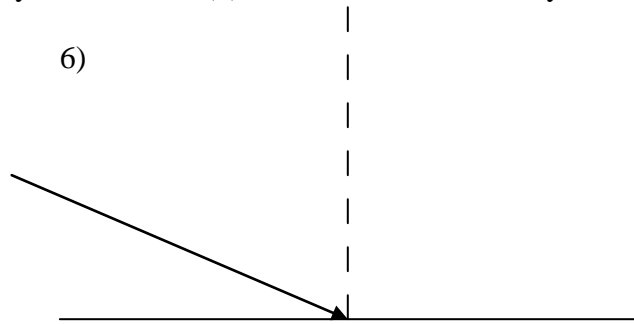
Given the ray of incidence (1) measure the ray of incidence (2) draw in the reflected ray

5)



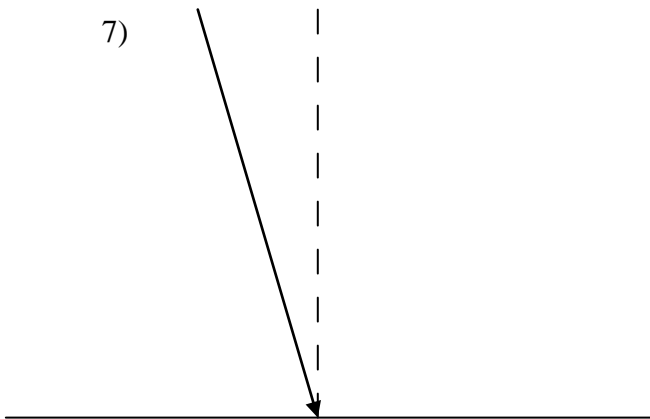
$\theta_i = \underline{\hspace{2cm}}$ $\theta_r = \underline{\hspace{2cm}}$

6)



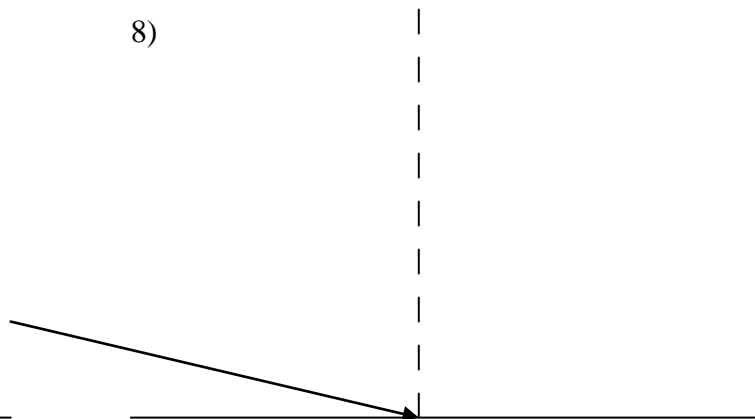
$\theta_i = \underline{\hspace{2cm}}$ $\theta_r = \underline{\hspace{2cm}}$

7)



$\theta_i = \underline{\hspace{2cm}}$ $\theta_r = \underline{\hspace{2cm}}$

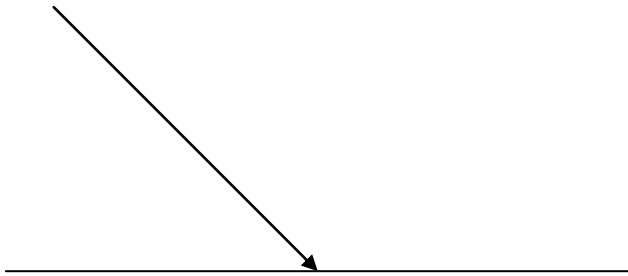
8)



$\theta_i = \underline{\hspace{2cm}}$ $\theta_r = \underline{\hspace{2cm}}$

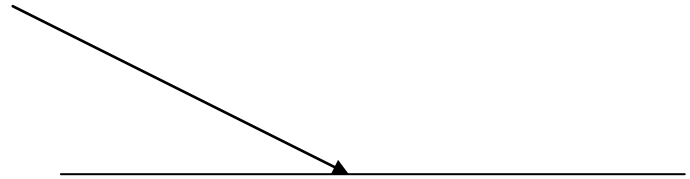
Given the ray of incidence (1) Draw the normal (2) Draw the ray of reflection

9)



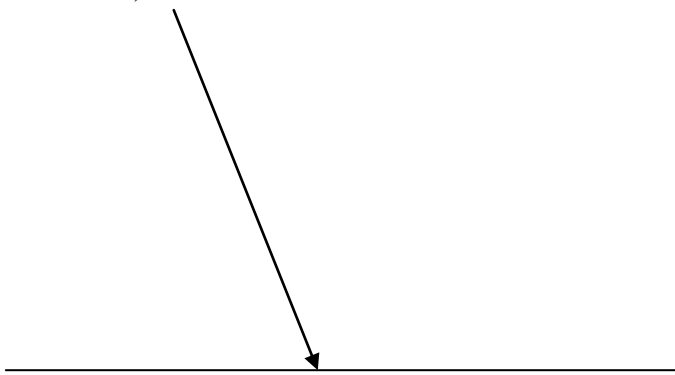
$\theta_i = \underline{\hspace{2cm}}$ $\theta_r = \underline{\hspace{2cm}}$

10)



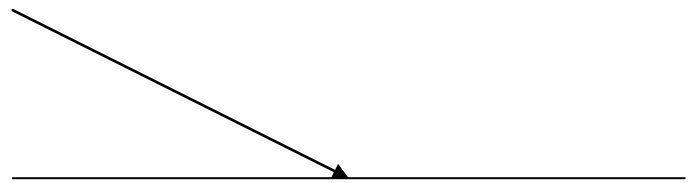
$\theta_i = \underline{\hspace{2cm}}$ $\theta_r = \underline{\hspace{2cm}}$

11)



$\theta_i = \underline{\hspace{2cm}}$ $\theta_r = \underline{\hspace{2cm}}$

12)



$\theta_i = \underline{\hspace{2cm}}$ $\theta_r = \underline{\hspace{2cm}}$

Given the angle of incidence 1) Draw in the ray of incidence 2) Draw the ray of reflection

13)



$\theta_i = \underline{35^\circ}$ $\theta_r = \underline{\hspace{2cm}}$

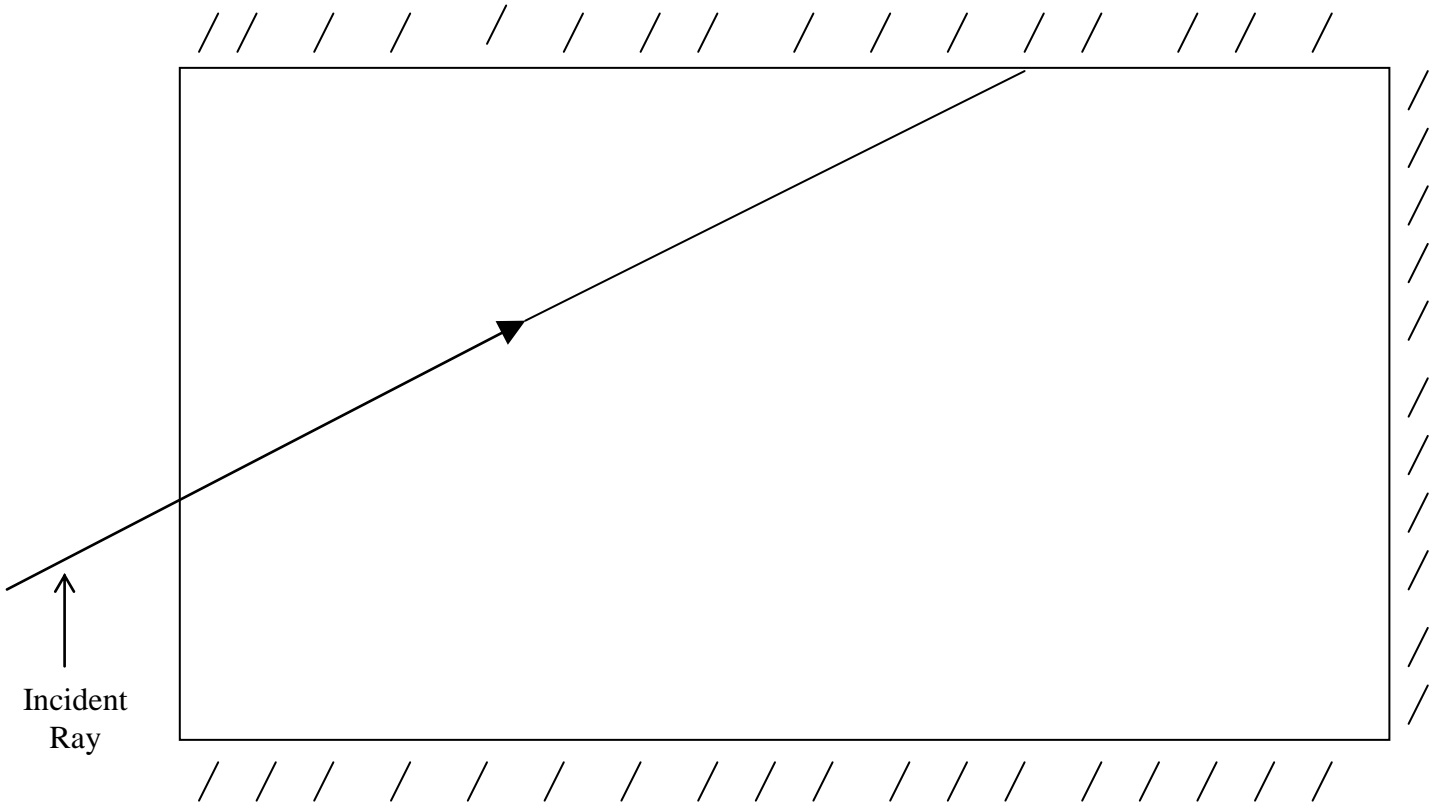
14)



$\theta_i = \underline{62^\circ}$ $\theta_r = \underline{\hspace{2cm}}$

15) The block below is mirrored on three sides, shiny side facing in. The ray has come into the box and is hitting the mirror at the top. Reflect the ray off the mirror using the rule of reflection (and a protractor). Continue reflecting the ray off the mirrors until it exits the left side of the box.

- Label each angle with either θ_i or θ_r .
- Give the measurements of the angles below



$\theta_{i1} =$ _____

$\theta_{r1} =$ _____

$\theta_{i2} =$ _____

$\theta_{r2} =$ _____

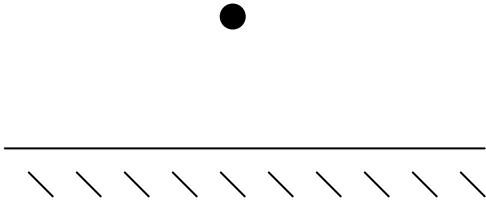
$\theta_{i3} =$ _____

$\theta_{r3} =$ _____

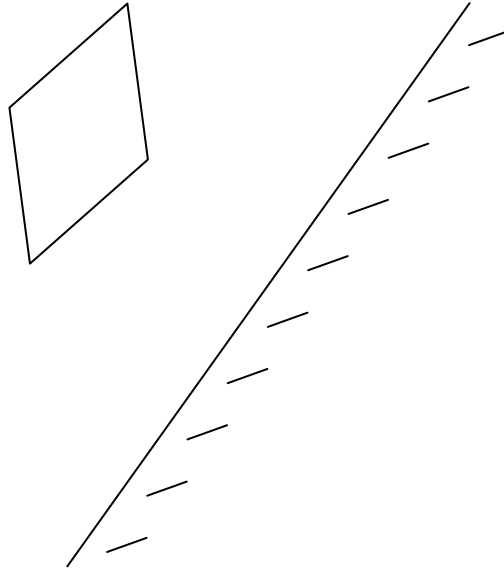
How are θ_1 and θ_2 related?

- 16) You are looking at an overhead view of two objects, each sitting in front of a mirror. For each object:
- Draw **three rays** traveling outward from the object to the mirror. Be sure to draw arrowheads on these rays.
 - Reflect each ray off the surface of the mirror.
 - At the end of each reflected ray, draw an eyeball because this is where someone's eyes would be as they are looking at the object in the mirror.
 - Follow each of the three lines back from the eyes until they converge. (If these lines go behind the mirror, they should be dotted because they represent virtual light.)
 - Draw a dotted image where the lines converge.
 - Congratulations! You have just found the image.

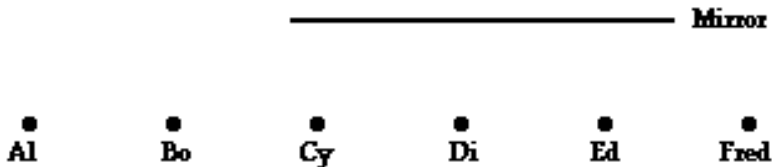
a)



b)



17) Who can see whom in the mirror?



Al can see...	_____
Bo can see...	_____
Cy can see...	_____
Di can see...	_____

- 18) If one wall of a room consists of a large flat mirror, how much larger will the room appear to be? Explain your answer.
- 19) Does a flat mirror reverse images up and down? What about left to right? Explain your answer.
- 20) What is the minimum height that a mirror must be in order for you to be able to see ALL of yourself? Draw rays to verify your answer. Remember, in order to see something, the light must come to your eye. (Hint: Your feet will be the hardest thing for you to see.)

