

## Light Croquet

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

The game of light croquet, played on lab benches in physics' classrooms across the nation, is similar to the game of croquet, played on grass in suburbs across the world.

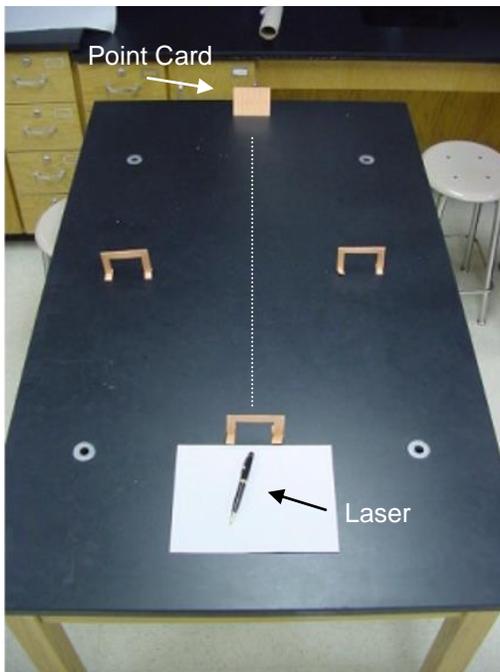
**Equipment:** 3 wickets (index cards), string, chalk, protractor, and 6 mirrors.

**Rules:** Arranging the mirrors, a laser beam (light) must travel through each of the wickets and hit the *point card* closest to its center to achieve maximum points.

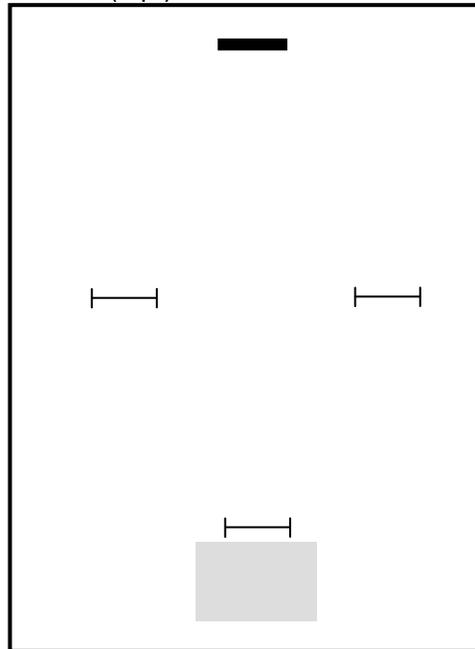
**Directions:** Arrange the wicket course on the lab station similar to the picture and diagram below. Tape down the legs of the wicket to prevent them from moving. The point card will be placed directly across from center of first wicket (dashed line). The laser will be placed behind the first wicket in an area of  $8.5 \times 11 \text{ in}^2$ , and you will choose what angle it will be fired at.

**Scoring:** 2 points for each wicket the laser passes through (max 6pts) plus a maximum of 5 points for hitting the very center of the point card (max 5pts).

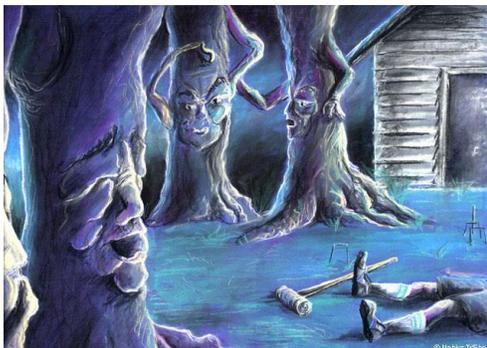
### Course #1



Draw the path of the light (1 pt) on the diagram below. Use a ruler, and be neat (1 pt).

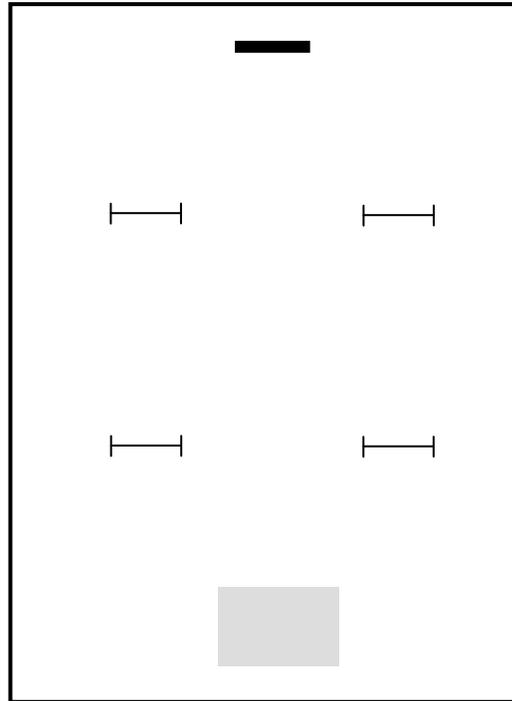


Laser can be placed anywhere in shaded area



Course #2 can be preformed for extra credit. YOU MUST COMPLETE THE DIAGRAM of where you would put the mirrors and draw the path the light will take in order to hit the point card in the center, making sure you pass through each wicket (+1 pt extra credit).

**Course #2**



Laser can be placed anywhere in shaded area

**Questions:**

- 1) (0.5 pts) What is the Law of reflection?
- 2) (0.5 pts) Looking at the diagram to the right, what is the value of the reflected angle?
- 3) (1 pt) Draw the path to show the direction a player should hit the ball to make it go into a corner pocket off two rails. Remember, it must go off two rails and angle in should equal angle out (+1 pt extra credit for three or more rails).

