

Math 150 - Mathematical Explorations
Pool Table Investigation Poster
Spring 2011
Due: Thursday, February 17

Directions: Each group must create a poster that provides answers to each of the following questions.

1. What sizes of pool table will have the ball exit in the upper left corner? The upper right corner? The lower right corner? The lower left corner? Notice that we always start from the lower left corner. Formulate a statement that answers these questions, and explain how you determined this.
2. Below are some giant pool tables that **are not** drawn to scale. Use your answer to Question 1 to indicate, for each table, in which corner the ball will end up.

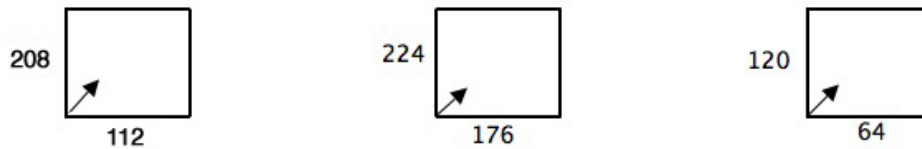


FIGURE 1. Three Large Tables

3. What sizes of pool table will have a path that passes through the middle of every square? What sizes of pool table will have a path that passes through the middle of only some of the squares? If you need to, experiment until you have a guess, and then formulate a statement that answers these two questions, and explain how you determined this.
4. How many times will the ball bounce off of a wall during its path? Formulate a statement that answers this question, and explain how you determined this.
5. How did you use patterns to determine answers to Questions 1 - 4 above?
6. What type of reasoning (inductive or deductive) did you use in determining your answers to Questions 1 - 4 above? Explain.
7. Suppose you wished to modify a portion of this activity for a 5th grade class; which part of the activity would you modify and how? What NCTM Expectations (Appendix A in our textbook) and MA Curriculum Frameworks (<http://www.doe.mass.edu/frameworks/math/2000/toc.html>) does your modified activity meet?