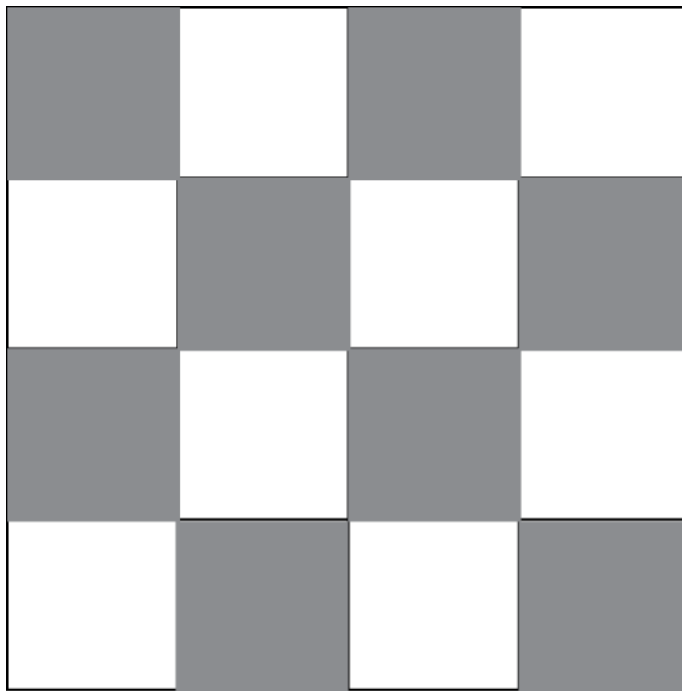Deductive Reasoning Exercise (Section 1.5)   NAMES:

Turn in one paper per group but be sure all members of the group have seen the final answers. Circle your name if the paper that gets turned in is your copy.

This is an extension of the Set I exercises for this section. I have given each couple a pair of pennies and several paper clips.

1. Below is a 4x4 grid as described in Set I. Play two rounds of the game to illustrate the point of the book. Start off with Player A placing pennies on two like-colored squares for one game. Start off with Player A placing pennies on two differently-colored squares for the second game.
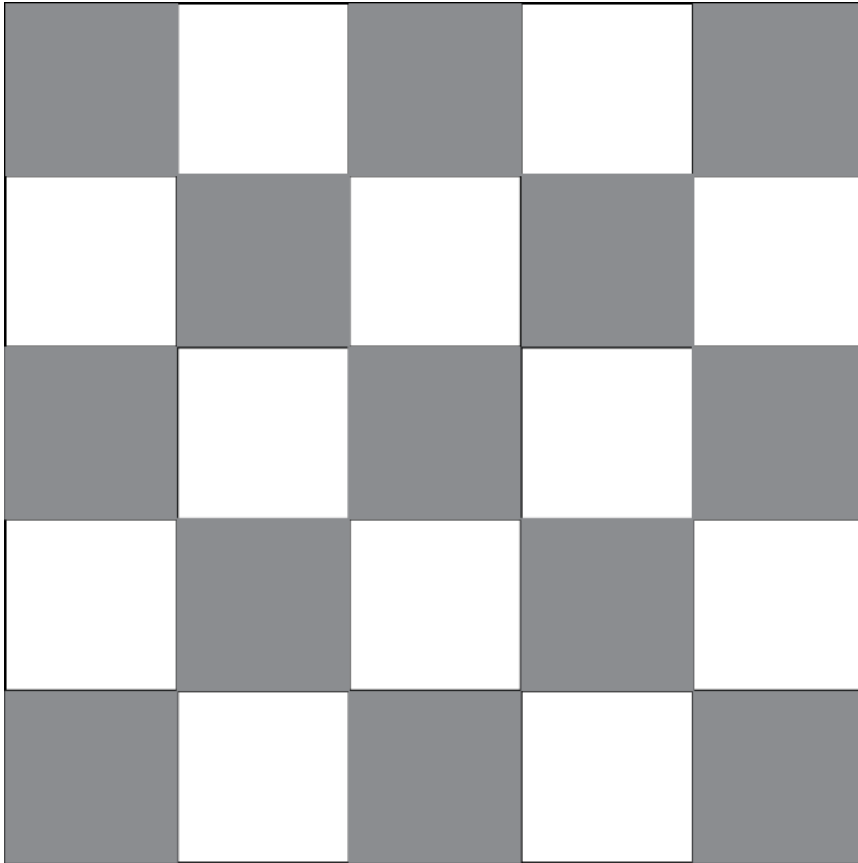

Rules of game: Player A places pennies on any two of the squares. Player B then places paper clips so that each clip lies on two squares that share a common side. The clips may not overlap.

To win, Player B has to place seven paper clips in this way so that they lie on the fourteen squares not occupied by the pennies. If Player B cannot do this, Player A wins.
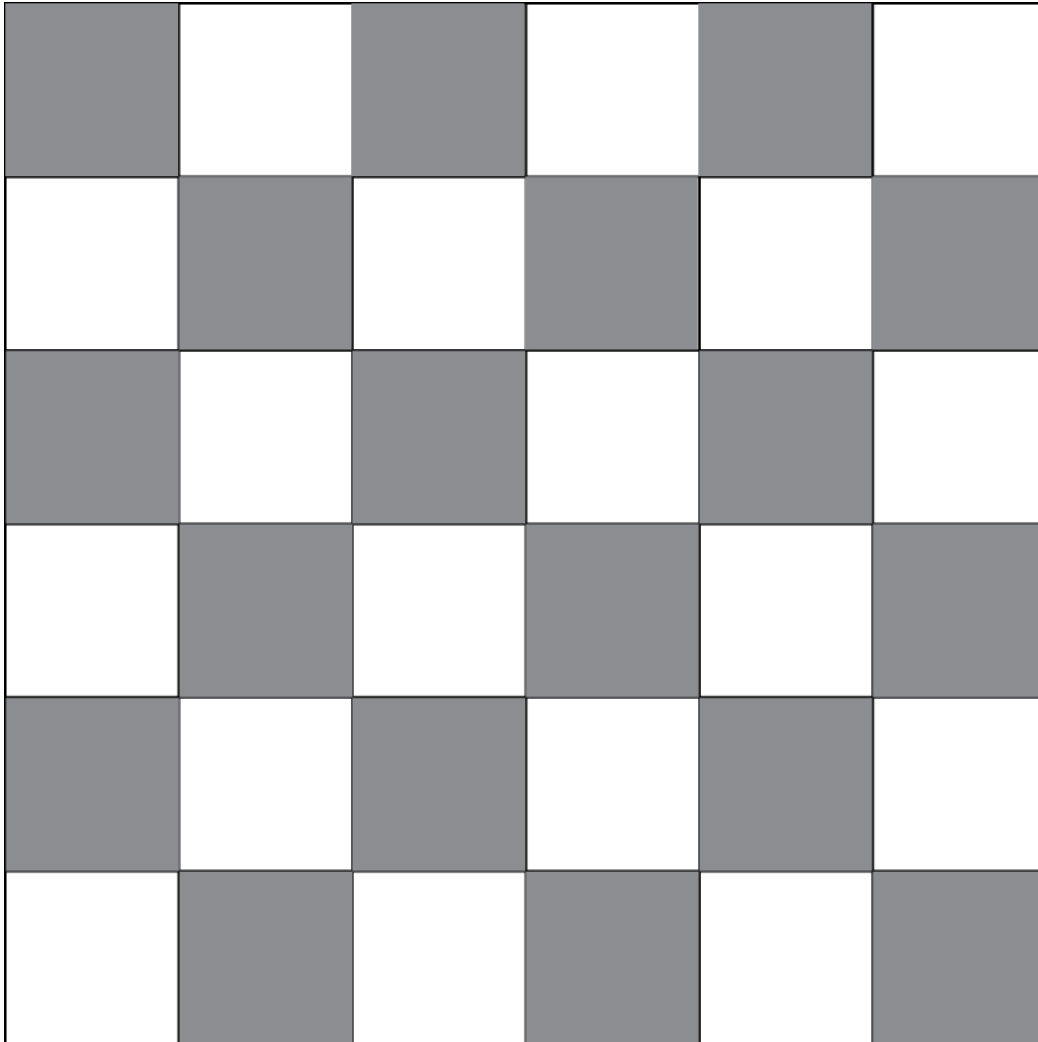
How does Player A ensure his/her victory?

For numbers 2 and 3, assume Player B is given as many paper clips as is necessary.

2. Here is a 5 by 5 chessboard. Consider the same game on this board.

What are your conclusions? Will Player A or B always win or lose? Why?

3. Here is a 6 by 6 chessboard. Consider the same game on this board.

What are your conclusions? Will Player A or B always win or lose? Why? Does Player A have to place his pennies on differently colored squares to win?