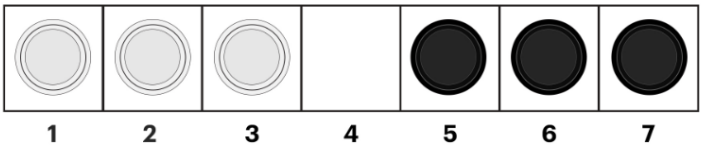
Mathletes Problem of the Week #4

Jumping Checkers



This week's puzzle comes to us from John Urschel, former offensive lineman for the Baltimore Ravens, who is currently working on a Ph.D. in mathematics at MIT. This is one of his favorite puzzles from Boris Kordemsky's book *The Moscow Puzzles.*

Draw a row of 7 boxes. Place 3 white checkers in squares 1, 2, and 3, and 3 black ones in the squares 5, 6, and 7. To move a checker, you can either move it to the next square if it is open or you can jump over an adjacent checker into the vacant square directly after it.

a) Your goal is to move the checkers, following only the rules above, so that all of the white checkers end up in squares 5, 6, and 7 and all the black checkers end up in squares 1, 2, and 3. Write or draw out the steps to your solution.

b) The shortest solution requires 15 moves. Can you find it? Write or draw out the steps to this solution.

Solutions & Explanations: (Try one or try them both! Record your solutions and explanations below and on the back.)

Name _____ **Class** _____

(First and last name, please!) **Solutions due: October 31st**