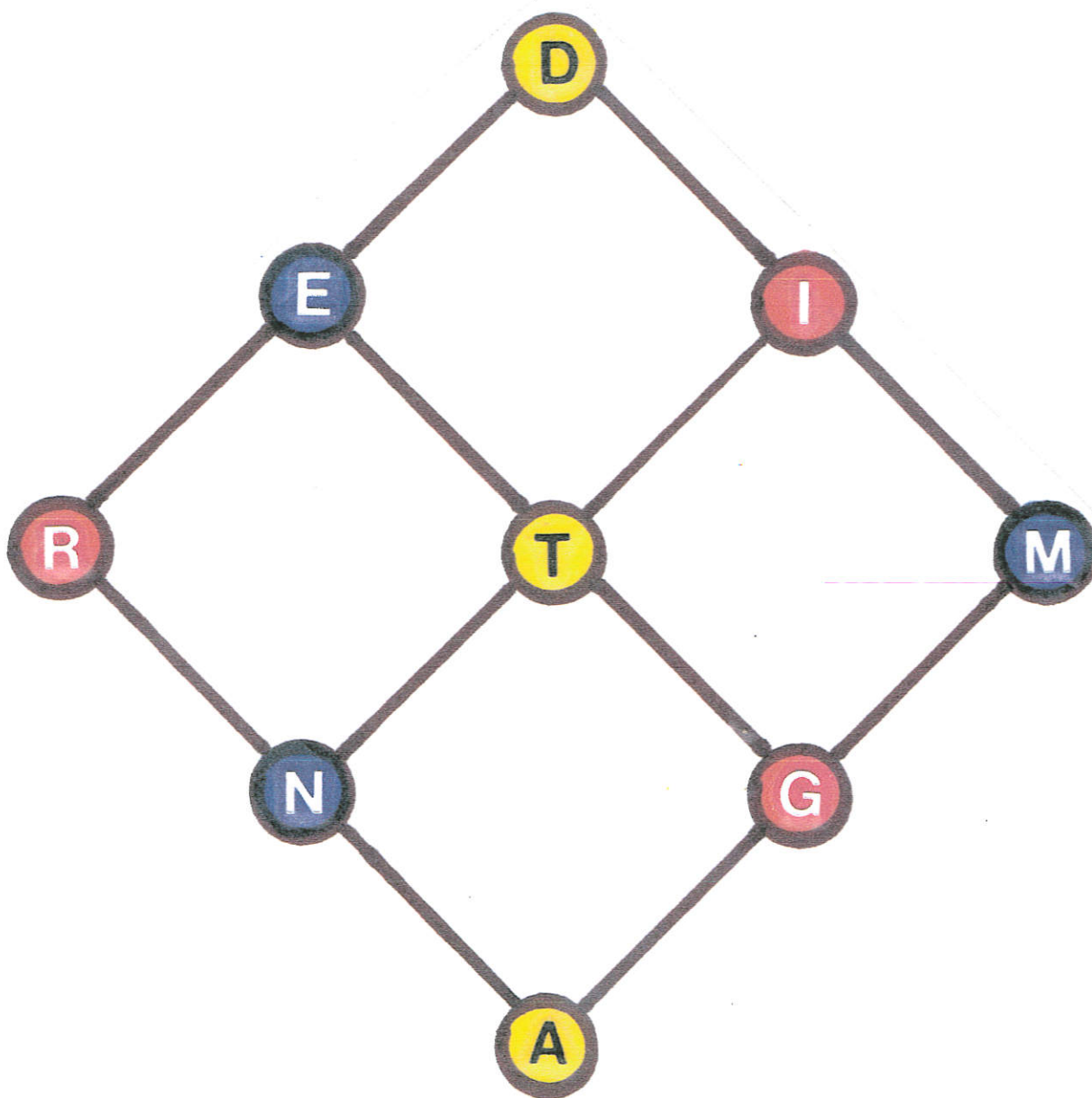# TWO GAMES DISPLAYED BY BUTLER'S
## 2017 CELEBRATION OF MIND

The nine different letters of MARTIN GARDNER label the nodes of this graph. Notice that the six lines anagram into RED, DIM GET, RAN, GAM and TIN. The colors become TAD, MEN and RIG.



The Game. Two players each with four distinctive tokens alternately choose nodes. The first to get a line of three or three of one color wins. If First does not win in four plays, the win is awarded to Second.

# THE MARTIN GAME
## By Jeremiah Farrell

The MARTIN diagram uses each letter of the name exactly three times to form nine chemical symbols.

The Game.  Two players alternately select nodes trying to obtain three nodes with a common letter or three nodes of the same color obtaining all the letters of MARTIN.  To be completely fair both players have only four plays and if First cannot win in four moves the win is awarded to Second.
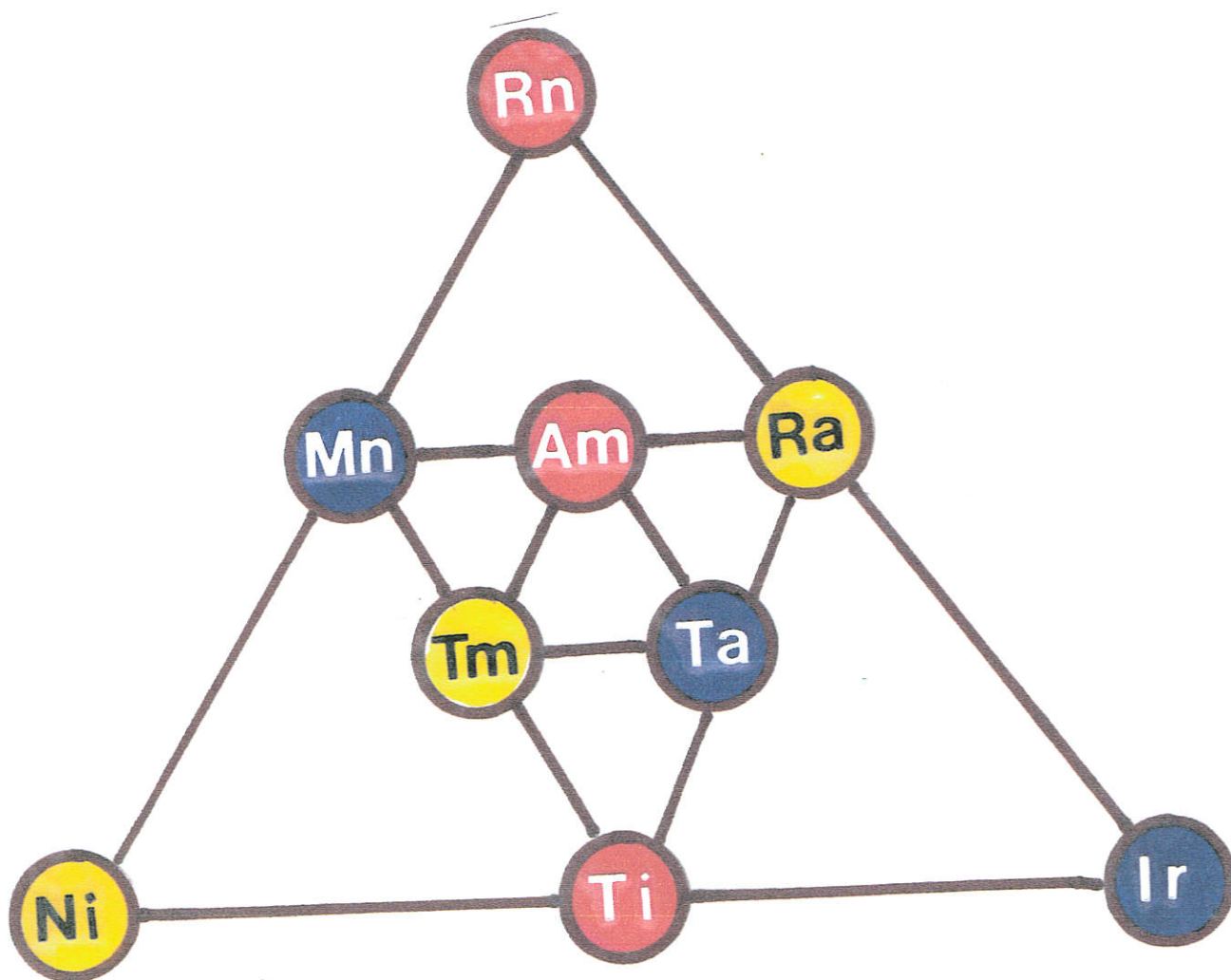


# MARTIN

# SOLUTIONS

How to win **Martin Gardner**. Take note of the three sets of misses. AIE, MRT, GND. First can take any node and if Second plays another in First's misses, First takes the third. When Second selects in a different miss set, First forces Second to waste a move by forcing Second to play another of his misses.

How to win at **Martin**. First can always win by initially selecting Mn, Ra or Ti. If Second chooses another of these three, First takes the last one and then plays rationally. If Second instead takes any other node than one of the three, First can win by forcing Second to block with a wasted move. Rational play will then win for First.

These games are examples of symmetric configurations and both are adaptations of some in the article "Configuration Games" by Jeremiah Farrell, Martin Gardner, and Thomas Rodgers in the 2005 book by AK Peters *Tribute to a Mathemagician*, edited by A. Cipa, E.D. Demaine, M.L. Demaine and T. Rodgers.