

1086-P5-2233 **Robert D. Franzosa***, robert.franzosa@umit.maine.edu. *True/False Edge-Notched Cards: A Hands-on Deductive Reasoning Calculator.*

In the chapter “The Binary System” in *New Mathematical Diversions* from *Scientific American*, Martin Gardner presents a deck of edge-notched cards that he uses to demonstrate binary sorting, to demonstrate a number trick, and to solve a logic problem. Building on his approach to the logic problem, we show how to use the deck for a hands-on approach to basic deductive reasoning topics typically seen in an introductory abstract mathematics course. In particular, we show how the deck can be used to compare propositions for equivalence, identify tautologies, identify contradictions, construct truth tables, and construct valid arguments. (Received September 25, 2012)