

1067-P1-2306      **Dennis P. Walsh\*** (dwalsh@mtsu.edu), Box X070, Middle Tennessee State University, 1301 East Main Street, Murfreesboro, TN 37132. *Tic-Tac-Toe with Eeny, Meeny, Miny, Moe.*

By allowing various forms of randomness into the game of tic-tac-toe, one can escape the ubiquitous ties that occur when two smart people play the game. Using a simple random device, such as a coin or a die, a person can play tic-tac-toe against a phantom random player. We explore versions of the game that include random play versus random play, random play versus smart play, and random play versus random play. We will derive the win, lose, and tie probabilities for several variations showing, for example, that the probability of player X winning a random-play-versus-random-play game (under uniform randomness) is approximately .585. These various random games lend themselves nicely to explorations by students, and instructors can use the games to introduce or reinforce basic counting principles. (Received September 22, 2010)