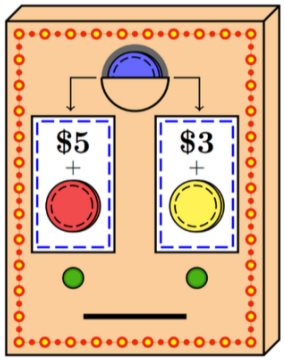
AMath Tea Time — Puzzle #8

2 June 2015

Problem

A casino machine accepts tokens of 32 different colors, one at a time. For each color, the player can choose between two fixed rewards. Each reward is up to \$10 cash, plus maybe another token. For example, a blue token always gives the player a choice of getting either \$5 plus a red token or \$3 plus a yellow token; a black token can always be exchanged either for \$10 (but no token) or for a brown token (but no cash). A player may keep playing as long as they have a token. Rob and Bob each have one white token. Rob watches Bob play and win \$500. Prove that Rob can win at least \$1000.



Hints

If you have any puzzles to share then send them my way at `cswiercz@uw.edu`*!*