

Math and Cookies

Title: How to Win the Dollar Game

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Abstract: Given some undirected, connected graph you can think of each vertex as a person, household, business, country, etc. having some amount of money (integer valued). Some may have lots of money, some may be in debt, or some may have no money at all. Now think of the process of lending and borrowing discrete amounts of money between two vertices only through connected edges. The question of the Dollar Game is how to ensure that every participant become "debt-free". Even more of an interesting question, given a graph of this type can you know from the start whether or not this is even possible? I will be discussing the more definitive rules of the Dollar Game, show some simple examples and more thoroughly explain the process and the question. Finally, I will reveal a method to deciding whether a game is "winnable" and if so how to win.

