

Lucky or Not?

Name:

Date:

1 Story

Once upon a time, there was a dog, Lucky, and his owner, Ryan. Ryan and Lucky loved playing a trick on their friends. When a friend came over, Lucky would run through the house and hide in one of the rooms. Ryan would then ask the friend to try and find Lucky.

Only one friend, Brandy, had no trouble finding Lucky. Even when Ryan and Lucky moved to a new house, she was still able to find Lucky easily.

Ryan asked Brandy, “How are you so sure where Lucky is?”

Brandy replied, “I noticed that no matter what house Lucky is in, he always runs through every door but runs through each door only once. I then use my knowledge of graph theory to determine which room he is in, depending on how the house is set up.”

“Does it always work?”

“It does, unless it is impossible for Lucky to run through every door without running through a door more than once.”

2 Goal

Our goal is to determine what Brandy’s strategy is. Then we can learn what graph theory is and how it relates to this game.

3 Examples

For the following examples try to determine where Lucky is. Remember that he runs through every door if he can and does not run through a single door twice. Make observations as you solve the puzzles.





