

PIG



There are many games called “Pig”. Here are the rules for the game I would like to discuss.

1. The object of the game is to score 100 or more before your opponent scores 100 or more. The game ends as soon as either player gets 100 or more. There are no “last licks”. There is no penalty for exceeding 100.
2. A turn consists of a sequence of one or more rolls of a single die. The players alternate turns.
3. A player’s turn ends in one of two ways. If she rolls a 1, her turn ends and she receives zero for that entire turn. If she decides not to roll again, she receives the total of the rolls she has made on that turn.
E.g. If she rolls 6, 5, 1 she gets zero for that turn
E.g. If she rolls 6, 5 and then passes, she receives 11 for that turn.

Let’s stop for a minute and play this game against a computer.

<http://cs.gettysburg.edu/projects/pig/pigggame.html>

Many mathematical questions immediately occur. Some of these are easy. Some are very hard. Write down three mathematical questions about this game.

Many papers have been written about this game. Here’s one:

<http://cs.gettysburg.edu/~tneller/papers/umap10.pdf>