

Games and Probability

You can sometimes use probability to increase your chances of winning a game.

For example, in a card game called Gin Rummy, you win by grouping your cards in runs (three or more cards of the same suit in consecutive order) or sets (three or four cards of the same rank). For example, the card hand shown has two sets. If the player is able to get the 4 and 6 of diamonds, the hand will contain a run and will also be a winning hand.



By carefully watching and remembering the cards that your opponent collects or discards during play, you can often determine your probability of getting a particular card that you want.

- ?** How can you apply your knowledge of probability to increase your odds of winning a game?
- Choose a game, such as Gin Rummy or cribbage, that has many options and variables.
 - Play the game with a friend. As you play, keep track of situations in which you used probability to decide what card to play. These situations should include, where possible, probabilities or odds, and independent, dependent, or mutually exclusive events.
 - Describe these situations mathematically, indicating the type of probability involved. Explain how you used probability to help you make decisions.
 - Present your results. Your presentation should include at least two helpful strategies to improve a player's chance of winning the game.

Task Checklist

- ✓ Did you describe each situation and event clearly?
- ✓ Did you justify the decisions you made?
- ✓ Did you use appropriate mathematical language?