

Technology Project 2

Simulations

Group Members:

1. _____
2. _____
3. _____

We are going to use the computer to perform some simulations. In each case perform at least fifty simulations before finding the average value or chance of something happening. Things will go quicker if you have two of the partners do the simulations and the third person enter the results into Minitab. Instead of the normal context for these problems, describe the model you're simulating and how the simulation is done.

Follow the [Minitab instructions](#) under the technology exercises link on the website for information about how to do the simulations.

1. A couple plans to have children until they have at least two girls and two boys. How many kids should they expect to have before getting at least two of each sex?
2. Four couples at a dinner party play a board game after the meal. They decide to play as teams of two and to select the teams randomly. How likely is it that every person will be teamed with someone other than the person he or she came to the party with?
3. Jamal Crawford of the Chicago Bulls had a 38.6% field goal shooting percentage during the 2003-2004 season. During one game, he made 4 field goals in a row and the announcer said "He's hot tonight! He's in the zone!" Jamal averages 16.475 field goal attempts per game (but we'll call it 16 because we have to work with a whole number). Is it unusual for him to make four or more field goals in a row during a game?
4. A new electronics store holds a contest to attract shoppers. Once an hour someone in the store is chosen at random to play the Music Game. Here's how it works. An ace and four other cards are shuffled and placed face down on the table. The customer gets to turn cards over one at a time, looking for the ace. The person wins \$100 worth of free CDs or DVDs if the ace is the first card, \$50 if it is the second card and \$20, 10, or \$5 if it is the third, fourth, or fifth card chosen. What is the average dollar amount of music the store will give away?
5. What is the probability of getting exactly two cards that match (one pair) when you draw a five card poker hand? Do not count hands with two pairs, full houses, three of a kind, or four of a kind.