**Simulation Problems Worksheet**

***Describe how you would conduct one trial of a simulation model for each of the following situations.***

1. Based on his history, Leon has an 80% chance of making a foul shot in a basketball game. Suppose Leon attempts 18 foul shots in a game. Describe one trial of a simulation model for Leon’s foul shot results in a game.

2. Based on her history, Mindy scores on 60% of her shots on goal in a field hockey game.

Suppose she attempts 8 shots on goal in a game. Describe one trial of a simulation model for Mindy’s shots on goal results in a game.

3. The Bumble Bees’ chance of winning a football game is 20%. Suppose they play 15 football games in a season. Describe one trial of a simulation model for their 15 game season.

4. Based on his history, Anthony has a 75% chance of making a foul shot in a basketball game. Suppose he makes 16 shots in a game. Describe one trial of a simulation model for Anthony’s foul shot results in a game.

5. A goalie saves half of the shots on goal. Suppose there were twelve shots in a game.

a) Describe how you would conduct one trial of a simulation that models the results of the shots on goal.

b) Suppose the goalie saved 2/3 of the shots on goal. Describe how you would conduct one trial of a simulation that models the results of the shots on goal.

c) How many trials should be conducted to obtain reasonable results? Use mathematics to justify your answer.

6. Carlos has two chances to get the correct answer on a multiple-choice question with three choices. Suppose he guesses. He will answer correctly on the first try $\frac{2}{3}$ of the time. If he has to try again, he has a 50% chance of getting the correct answer. Describe one trial of a simulation model for Carlos getting the correct answer on a multiple-choice question.