Probability

Mathematical Explorations – Math 110

Block 2, Fall 2007

1. You stand before three doors. Behind one door is a new car, the other two doors have nothing behind them. You choose one of the three doors. One of the two doors you didn't choose is opened with nothing behind it. You have the option of changing your decision. Should you, and why?

2. (a) A man says, "I have three children. At least one is a boy." What is the probability that all three are boys?

   (b) What is the probability that all three are boys if the man says, "My oldest child is a boy."?

3. (a) How many people do you need in a room until there is at least a 50-50 chance that two people have the same birthday?

   (b) How many people do you need in a room until there is at least a 50-50 chance that someone else has the same birthday as you?