1. Sometimes people conducting surveys want to ask questions with potentially embarrassing answers. They may use something called a *randomized response technique* to make sure that survey participants have no reason to lie. For example, suppose you wanted to determine how widespread cheating is on campus. You could print the phrase "I have cheated on a test" on 4 cards and "I have never cheated on a test" on 6 cards. Then you could ask each survey participant to select a random card and tell you if the statement on the card is true or false *without showing you the card*.

a) Suppose 55% of those surveyed said the statement on the card was true. What is your estimate of the percentage of Gonzaga students who have cheated?

b) Suppose 60% of those surveyed said the statement on the card was true. What is your estimate of the percentage of Gonzaga students who have cheated?

c) Suppose 65% of those surveyed said the statement on the card was true. What is your conclusion?

2. Suppose you know that you have either a $1 bill or a $20 bill (each is equally likely) in your pocket (and that's all). A friend then gives you a $1 bill which you put in your pocket. Later you take a random bill from your pocket and discover that it is a $1. What is the probability that you have a $20 bill in your pocket?