



## New Year Probability Questions

### **The Birthday Problem . . .** finding the probability of the same birthday

- a. In a group of six people, what is the probability that at least two have their birthdays in the same month?
- b. In a class of 25 students, what is the probability that at least two have the same birthday?
- c. How many students would you have to ask to have a 50-50 chance that two of them have the same birthday?

### **The Dice Problem . . .** conditional probability

- a. What is the probability of getting a 2 when rolling a six-sided die?
- b. If you are told that the value on the die is an even number, what is the probability that the value on the die is 2, given this information?

### **The Health Canada Problem . . .** applied conditional probability

A recent survey asked Canadians aged 18 and older what physical activities they had participated in during the year. The survey estimates that the participation rate of Canadians in skating at 30%. In a random sample of three (a small sample to begin ... be thankful :) Canadians, at least one person is known to participate in skating. Estimate the probability that exactly two in the sample participate in skating.