## Probabilities Using Combinations

1. To win a grand prize in a fundraising draw, you need to match seven numbers from 1-27, without regards to order.
a) What is the percent chance of winning the grand prize?
b) What is the percent chance of winning second prize, which involves matching 6 of the seven winning numbers?
c) What is the probability of not winning the first or second prize?
d) Should you be buying lottery tickets? Why or why not?
2. A teacher uses a random name generator to select six students to present their project. In a class of 23 students, 12 are male and 11 are female.
a) What is the probability that an equal number of male and female students will present?
b) What is the probability that more female than male students will present?
c) Which outcome is more likely?
3. A Plinko board has six rows of pegs. The top slots are numbered 1-6. The bottom slots are labelled A-G. Contestants choose the slot into which they drop a disc. What is the best strategy for releasing the disc and for predicting its landing location?
4. To get from home to work, Hannah travels four blocks south and five blocks east. What is the probability that she travels first four blocks south and then five blocks east?
