

## Practice problems for Counting

**Problem 1.** A certain shoe comes in 5 different styles with each style available in 4 distinct colors. If the store wishes to display pairs of these shoes showing all of its various styles and colors, how many different pairs would the store have on display?

**Problem 2.** In a fuel economy study, each of 3 race cars is tested using 5 different brands of gasoline at 7 test sites located in different regions of the country. If 2 drivers are used in the study, and test runs are made once under each distinct set of conditions, how many test runs are needed?

**Problem 3.** A witness to a hit-and-run accident told the police that the license number contained the letters RLH followed by 3 digits, the first of which is a 5. If the witness cannot recall the last 2 digits, but is certain that all 3 digits are different, find the maximum number of automobile registrations that the police may have to check.

**Problem 4.** In how many ways can 4 boys and 5 girls sit in a row of the boys and the girls must alternate?

**Problem 5.** How many ways are there to select 3 candidates from 8 equally qualified recent graduates for openings in an accounting firm?