# Brown/Paris Numerical Analysis: Problem set 1

### July 6th 2015

## 1 Problem 1

Load the provided mean monthly temperature data for Providence, RI from the course website. Generate a plot of the high and low temperatures for each month, and overlay the average high and average low temperatures.

## 2 Problem 2

In the Monty-Hall problem, you get to play in a game show! The contestant gets to choose from three closed doors. Behind one door is a new car, but the other two have a goat behind them. The contestant chooses one door at random. The game show host will then show which of the other two doors has a goat behind it. The player can then choose either: Option A (keep initial guess) or Option B (switch guess to other door).

In this assignment we will write a code to perform a Monte-Carlo simulation to estimate the probabilities of winning with both options. We will first write a subroutine to simulate the result of playing a single game with each strategy. We will then use this subroutine many times to calculate the average success rate of each approach.