Automata Theory: Assignment 2

Due date: September 6 (Thursday)

Problem 1 (4 points)
(a) Draw an example of a graph that has six vertices and six edges. Mark all simple cycles in your graph.

(b) Draw an example of a tree that has seven vertices, five of which are leaves. How many edges are in your tree?

Problem 2 (6 points)
Prove the following equality by induction:

$$1^3 + 2^3 + 3^3 + ... + n^3 = (1 + 2 + 3 + ... + n)^2.$$