

CSCI 338: Exercise 02

I will give non-regular exercises for you to try (remember, you must work on these besides following my lectures or read book sections!). These will not be graded. Solutions will be posted on D2L a bit later.

Problem 1

Given a (connected) planar graph $P = (V, E)$, prove Euler's formula: $|V| + |F| - |E| = 2$, where F (resp. E) is the set of faces (resp. edges) of P and $|F|$ (resp. $|E|$) is the size of F (resp. E).

Hint: Use induction on $|V|$, or $|E|$, or $|F|$.