

General Mathematics and CPS II

Exercise 5

February 19, 2014

1. Ivanov states the following famous theorem (p. 100, Theorem 11):

A finite connected graph is Eulerian (there is a chain containing every edge) if and only if it has either two vertices of odd valency or none.

Write out a complete proof following the sketch given by Ivanov.

2. (Ivanov, p. 34, Problem 6.) A billiard ball sits against the cushion of a billiard table. In which direction should the ball be cued so that after bouncing off the three other sides of the table, it returns to its point of departure?