

Homework 5: Graphs and Geometry V

Konstantin Miagkov

February 11, 2018

Problem 1.

Show that for any positive integer n there exists a graph on $2n$ whose degrees of vertices are $1, 1, 2, 2, 3, 3, \dots, n, n$ (this is the list of the degrees of all $2n$ vertices).

Problem 2.

Show that given any triangle ABC there exists a point O on the plane such that $AO = BO = CO$.

Problem 3.

The angle $\angle A$ of a rhombus $ABCD$ is equal to 60° . Points M and N were chosen on AB and BC respectively, in such a way that $AM = BN$. Show that the triangle MDN is equilateral.