Lesson 5: Graphs and Geometry V

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May 20, 2019

Problem 1.
An Eulerian path in a graph is a path which passes through every edge exactly once. Show that there exists an Eulerian path in a given graph if and only if the graph is connected and all but exactly two vertices have even degrees.

Problem 2.
Show that the segment connecting the midpoints of the opposing sides of a parallelogram goes through the intersection of its diagonals.

Problem 3.
Show that the angle bisectors of a triangle intersect at the same point.