Mathematics of Infrastructure Planning

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Exercise sheet 1
Deadline: Thu, 19. April 2012, **16:15 in MA 313**

Exercise 1.   **10 points**

Given an undirected graph $G = (V, E)$, find a system of inequalities and/or equations (plus integrality and/or 0/1-constraints) that guarantees that, for every node w in a given subset $W \subseteq V$, the number of edges that contain node w is

a) zero or two.

Find also such a system that guarantees that the number of edges containing w is

b) nonnegative and even.