Exercise #1

The graph **`ExPCST_2021.gml`** contains a set of potential locations that a telecom company can connect with a network rooted in node 1.
Each location (node) *u* has associated a revenue [**`revenue`** attribute in the graph], a number of customers [**`customer`** attribute in the graph] and each edge *uv* has a connection cost [**`cost`** attribute in the graph].

1. Design a network that maximizes company's profit

2. The company will receive an incentive of 1000 Euro if it connects at least 82% of the customers. Is it convenient to achieve this coverage target?

3. The company can install in the root a router device (cost 1500 Euro) that halves the connection costs to any node connected to the root but can accept up to 8 connections. Is it convenient to install such a device?