# Question 1

It is a max flow problem. We try to construct this question into flow network.

Making a bipartite graph. Left vertices represent population of the corresponding cities and the right vertices represent the number of pods in the corresponding of cities.

Connect each left vertex city with super source by a directed edge of population of this city as . Connect right vertices with the super sink t which represent the maximum flow.

Firstly, set t = 0.

Connect each city with a directed edge of the number of remaining pods.

The edge capacity is the number of pods (. And we also add another edge weighted as which is the number of days transfer from to . If the sum of path travelled exceed X, that is not feasible path, we need choose another path.

Therefore we construct a bipartite graph, and turn the question to the flow network.

This is a max flow problem, we use Ford-Fulkerson algorithm to find the max flow which is the maximum invaders.

The below graph is an example of the agritourism, using Ford - Fulkerson algorithm to get the maximum flow.