1. (7 points total) Consider the set of nine (9) IPv4 prefixes shown below

   0.0.0.0/0; 11.0.0.0/9; 8.0.0.0/5; 121.12.0.0/16; 120.0.0.0/7; 121.32.0.0/11; 121.12.36.0/23; 121.12.37.64/26; 121.12.37.96/32

   (5 points) For each prefix, identify which other prefixes, if any, it contains

   (2 points) Identify the longest prefix match result from among the above nine (9) prefixes for the following IPv4 addresses
   11.132.66.224 and 121.12.37.73

2. (3 points total) Consider a network that runs the OSPF protocol and consists of two areas, area 0 and area 1, with two area border routers, A and B, connecting the two areas. Router A advertises into area 1 a cost of 14 to route r located in area 0, while router B advertises into area 1 a cost of 5 for the same route. Router C in area 1 has a cost of 2 to area border router A and a cost of 10 to area border router B.

(1 points) Through which area border router does router C decide to reach r and what is its distance to r?

(2 points) Area border router B needs to increase its cost to r from 5 to 10. How is this change advertised in area 1? Does it trigger a new Dijkstra computation in internal routers of area 1?