

Your kingdom is composed of 8 walled cities, which are connected by roads, tunnels, and other various pathways. There may be redundant connections between the cities, and there are even some odd paths that simply go from a city back to itself.

An earthquake has occurred, and all roads, tunnels and paths have been destroyed. Each has a rebuilding cost which has been reported to you in the manifest below. You want to rebuild the minimum number of paths/roads/tunnels to connect all of the cities, and you want to do that with minimum cost. What is that minimum cost?

You should use Kruskal's algorithm here. Trust me.

Pathway	Rebuilding Cost	Pathway	Rebuilding Cost
Path from Daro to Gwan	2	Path from Forsal to Gwan	35
Tunnel from Enid to Caral	2	Road from Forsal to Angkor	36
Path from Angkor to Enid	5	Path from Forsal to Angkor	39
Path from Enid to Caral	6	Tunnel from Gwan to Babylon	43
Path from Caral to Enid	7	Tunnel from Enid to Caral	44
Road from Gwan to Enid	8	Tunnel from Gwan to Babylon	44
Tunnel from Babylon to Hatra	9	Tunnel from Angkor to Angkor	48
Road from Babylon to Forsal	9	Path from Daro to Angkor	49
Road from Forsal to Hatra	11	Tunnel from Babylon to Hatra	51
Road from Caral to Daro	13	Tunnel from Caral to Gwan	53
Road from Enid to Enid	14	Road from Angkor to Angkor	54
Road from Enid to Angkor	14	Road from Hatra to Gwan	56
Road from Enid to Gwan	15	Path from Enid to Caral	57
Road from Forsal to Daro	17	Path from Forsal to Caral	61
Path from Hatra to Daro	17	Road from Hatra to Angkor	61
Road from Gwan to Gwan	18	Path from Enid to Forsal	62
Tunnel from Hatra to Babylon	20	Road from Babylon to Caral	66
Path from Enid to Hatra	21	Tunnel from Forsal to Gwan	66
Path from Daro to Enid	24	Tunnel from Forsal to Babylon	68
Path from Gwan to Gwan	26	Path from Hatra to Hatra	68
Tunnel from Forsal to Hatra	27	Path from Daro to Gwan	73
Road from Angkor to Daro	29	Road from Enid to Babylon	73
Road from Caral to Caral	29	Tunnel from Forsal to Caral	76
Road from Forsal to Enid	30	Tunnel from Babylon to Angkor	77
Tunnel from Gwan to Daro	34	Path from Babylon to Daro	79
Road from Angkor to Babylon	35	Path from Hatra to Angkor	79
Tunnel from Angkor to Caral	35	Road from Angkor to Caral	82

## **Answer to Clicker Question on Kruskal's Algorithm**

52. I explain it, and show how you should answer a question like this on an exam, in <https://youtu.be/TCqULf81594>.