Blake Q's #14

July 17, 2020

All of the questions are based off the train network given in Q1

Question 1

I have a plan to construct a rival train network in Melbourne. I have constructed an example graph where the weight corresponds with the time taken from each station (vertex).

What is the **minimum time taken from A -> G**?
Draw the corresponding **shortest path tree for all vertices** from A.

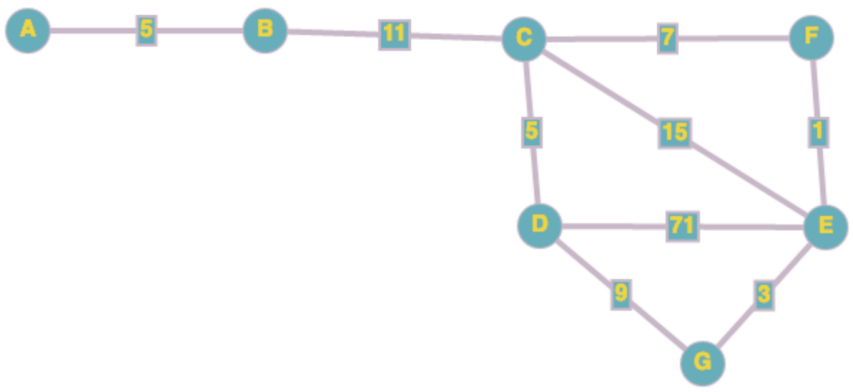

Figure 1: Rival Train Network

Question 2

The weights of the rival train network now represent the max flow of passengers from each of the vertex. A is the source of passengers and G is destination of the passengers

Make 3 cuts and **determine the max flow (min cut)** in the proposed network.
What could be done to **improve the network**?

Question 3

The proposed network looks pretty expensive, let's get rid of all those unnecessary edges.

Construct a minimum spanning tree of the rival train network. This means that all of the edges added together should be a minimum.