The Gold Lines Railway Company specializes in coal handling. On Sunday, August 18, Gold Lines had empty cars at the following towns in the quantities indicated:

TOWN	SUPPLY OF CARS
1. Morgantown	35
2. Youngtown	60
3. Pittsburgh	45

By Wednesday, August 21, the following towns will need coal as follows

TOWN	DEMAND FOR CARS
A. Coal Valley	30
B. Coaltown	45
C. Coal Junction	25
D. Coalsburg	20

Using a railway city-to-city distance chart, the dispatcher constructs a mileage table for the preceding towns. The result is:

FROM	TO			
	Coal Valley	Coaltown	Coal Junction	Coalsburg
Morgantown	50	30	60	70
Youngtown	20	70	40	90
Pittsburgh	60	40	80	30

The company would like to minimize total miles over which cars are moved to new locations and compute the best shipment of coal cars.

a) Determine the initial solution using VAM.
b) Using the stepping-stone solution method for the tableau of a), determine the closed path and net mileage change for Pittsburgh to Coal Valley route.