Problem 5 - Shortest Path: You need to take a trip by car to another town. Depending on which route you choose, there are five other towns (call them A, B, C, D, E) that you might pass through on the way. The table below summarizes the distance between adjacent towns (empty entries indicate that there is no road directly connecting these two towns).

Town	Miles between Adjacent Towns					
	A	B	C	D	E	Destination
Origin	40	60	50	—	—	—
A		10	—	70	—	—
B			20	55	40	—
C				—	50	—
D					10	60
E						80

(a) Draw a directed graph representing the possible routes from the origin to the destination.

(b) Formulate the shortest path problem as a Binary Program.

(c) Solve the problem in Excel/MATLAB.

(d) Use MATLAB's function "graphshortestpath" to verify your answer in (c).