Question 3 [15 marks]:

The lengths of all the roads connecting a pair of cities is shown in the following table:

Pair of cities	Length (km)
(A, B)	2
(B, C)	3
(C, D)	2
(C, E)	7
(A, C)	4
(A, F)	3
(B, E)	5
(F, D)	6
(E, D)	7

Draw a graph to model the problem and apply a suitable algorithm to find the shortest path from city C to each of the remaining cities. You must show all the steps in finding these paths step-by-step using a table.

Shortest Path	Length
C	0
C, D	2
C, B	3
C, A	4
C, E	7
C, A, F	4 + 3 = 7