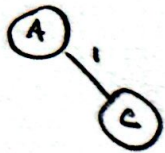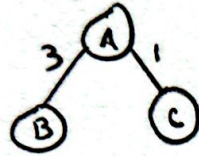1. Prim's algorithm
Graph 1
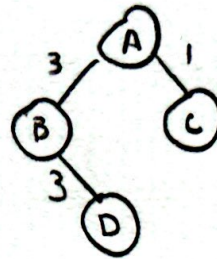
Step 1
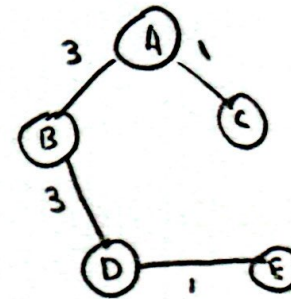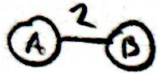

Step 2

Step 3

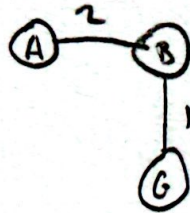Step 4

$1+3+3+1 = 8$

Graph 2

Step 1

Step 2

Step 3
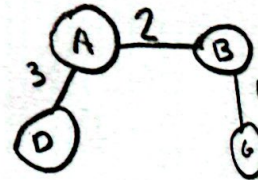
Step 4
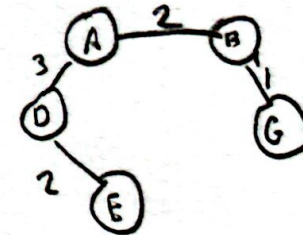
Step 5
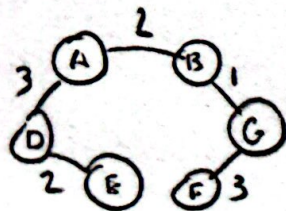
Step 6
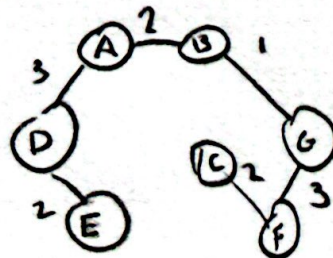
$2+3+2+1+3+2 = 13$

Part two

Graph 1

A to B

A → B => 3 take the minimum

A → C → B => 6

A → C → D → B => 7

A - C → E → D → B => 9

A to D

A → B → D => 6

A → C → D => 4

A → C → B → D => 9

A → C → E → D => 6

A to C

A → C => 1

A - B → C => 8

A → B → D → C => 9

A → B → D → E → C => 11

A to E

A → C → E => 5

A → B → D → E => 7

A → B → C → E => 12

A → B → D → C → E => 12

Routing Table   For A

Destination	distance	next hop
B	3	B
C	1	C
D	4	C
E	5	C

For B

Des6	dist	nxt hop
A	3	A
C	4	A
D	3	B
E	4	D

For E

Des6	dis6	next hop
A	5	C
B	4	D
C	4	C
D	1	D

For C

Des6	Dis6	nxt hop
A	1	A
B	4	A
D	3	D
E	4	E

For D

Dec6	Dist	nxt hop
A	4	C
B	3	B
C	3	C
E	1	E

For Graph2

For A

Des6	dis6	nxb hop
B	2	B
C	4	C
D	3	D
E	5	A
F	6	C
G	3	B

For B

Des6	dis6	nxb hop
A	2	A
C	5	C
D	5	A
E	8	G
F	4	G
G	1	G

For C

Des6	dis6	nxb hop
A	4	A
B	5	B
D	7	A
E	5	E
F	2	F
G	5	P

For D

Des6	dis6	nxb hop
A	3	A
B	5	A
C	4	E
E	2	E
F	6	E
G	9	E

For E

Des6	dis6	nxb hop
A	5	D
B	8	C
C	5	D
D	2	F
F	4	F
G	7	

For F

Des6	dis6	nxb hop
A	6	C
B	7	C
C	2	C
D	6	E
E	4	G
F	3	
G		

For G

Des6	dis6	nxb hop
A	3	B
B	1	B
C	5	F
D	9	F
E	7	F
F	3	

Graph 1

(A)

A	0A	0A	0A	0A	0A
B	3B	3B	3B	3B	3B
C	1C	1C	C1	C1	C1
D	∞	C4	C4	C4	C4
E	∞	C5	C5	C5	C5

(E)

A	A1	A1	A1	A1	A1
B	B5	A4	A4	A4	A4
C	C0	C0	C0	C0	C0
D	D3	D3	D3	D3	D3
E	B4	B4	E4	E4	B4

(B)

A	A3	A3	A3	A3	A3
B	B0	B0	B0	B0	B0
C	C5	A4	A4	A4	A4
D	B3	D3	D3	D3	D3
E	∞	D4	D4	D4	D4

(D)

A	∞	C4	C4	C4
B	B3	B3	B3	B3
C	C3	C3	C3	C3
D	D0	D0	D0	D0
E	E1	E1	E1	E1

(E)

A	∞	C5	C5	C5
B	∞	D4	D4	D4
C	C4	C4	C4	C4
D	D1	D1	D1	D1
E	E0	E0	E0	E0

A

Dest	Cost	Nbr
A	0	A
B	3	B
C	1	C
D	4	E
E	5	C

B

Dest	Cost	Nbr
A	3	A
B	0	B
C	4	A
D	3	D
E	4	D

C

Dest	Cost	Nbr
A	4	C
B	3	B
C	3	C
D	0	D
E	1	E

D

Dest	Cost	Nbr
A	1	A
B	4	A
C	2	C
D	3	D
E	4	E

E

Dest	Cost	Nbr
A	5	C
B	4	D
C	4	C
D	1	D
E	0	E

A

A	OA	OA	OA	OA	OA	OA	OA
B	B2	B2	B2	B2	B2	B2	B2
C	C4	C4	C4	C4	C4	C4	C4
D	D3	D3	D3	D3	D3	D3	D3
E	∞	D5	D5	D5	D5	D5	D3
F	∞	C6	C6	C6	C6	C6	C6
G	2	B3	B3	B3	B3	B3	B3

B

A	A2	A2	A2	A2	A2	A2	A2
B	B0	B0	B0	B0	B0	B0	B0
C	C5	C5	C5	C5	C5	C5	C5
D	∞	A5	A5	A5	A5	A5	A5
E	∞	10G	8G	8G	8G	8G	8G
F	∞	B4	G4	G4	G4	G4	G4
G	G1	G1	G1	G1	G1	G1	

C

A	A4	B3	A4	A4	A4	A4	A4
B	B5	B5	B5	B5	B5	B5	B5
C	C0	C0	C0	C0	C0	C0	C0
D	∞	7A	A7	A7	A7	A7	A7
E	ES	ES	ES	ES	ES	ES	ES
F	F2	F2	F2	F2	F2	F2	F2
G	∞	6F	F5	F5	F5	F5	F5

D.

A	A3	A3	A3	A3	A3	A3	A3
B	∞	A5	A5	A5	A5	A5	A5
C	∞	B7	B7	B7	B7	B7	B7
D	OD	OD	OD	OD	OD	OD	OD
E	E2	E2	E2	E2	E2	E2	E2
F	G5	G5	G5	G5	G5	G5	G5
G	∞	∞	G4	G4	G4	G4	G4

E

```
A  ∞   D5   D5   D5   D5   D5   D5
B  ∞   C10  D7   D7   D7   D7   D7
C  C5  C5   C5   C5   C5   C5   C5
D  D2  D2   D2   D2   D2   D2   D2
E  E0  E0   E0   E0   E0   E0   E0
F  F4  F4   F4   F4   F4   F4   F4
G  ∞   F7   F7   F7   F7   F7   F7
```

F

```
A  ∞   C6   C6   C6   C6   C6   C6
B  30  C4   G4   G4   G4   G4  G4
C  C2  C2   C2   C2   C2   C2  C2
D  ∞   E6   E6   E6   E6   E6  E6
E  B4  E4   F4   E4   F4   F4   E4
F  F0  F0   F0   F0   F0   F0   F0
G  G3  G3  G3  G3   G3   G3    G3
```

G

```
A  ∞·  B3 ·B3  D3   B3   B3   B3
D  B1  B1   B1   B1   B1   B1   B1
C  ∞   F5   F5   F5   F5   F5   F5
D  ∞   ∞    B6   B6   B6   B6   B6
E  ∞   F7   F7   F3   F7   F7   F7
F  F3  F3   F3   F3   K3   F3   K3
G  G0  G0  G0  G0   G0   G0   G0
```

A.

D	C	NH
A	0	A
B	2	B
C	4	C
D	3	D
E	5	C
F	6	B
G	3	B

B

D	C	NH
A	2	A
B	0	B
C	5	C
D	5	A
E	3	G
F	4	G
G	1	G

C

D	C	NH
A	4	A
B	5	B
C	0	C
D	7	A
E	5	E
F	2	F
G	5	F

E

D	C	NH
A		5	D
D		0	C
L		7	D
D		5	E
B		2	F
B		0	F
G		4	F
		7	

D

D	C	NH
A	3	A
B	5	A
C	7	E
D	0	B
E	2	E
B	6	A
G	8	

G

D	C	NH
A	3	B
B	5	B
C	6	F
D	7	B
E	3	F
G	0	G

D	C	NH
A	6	G
B	4	C
C	2	F
D	6	E
B	0	F
G	3	G