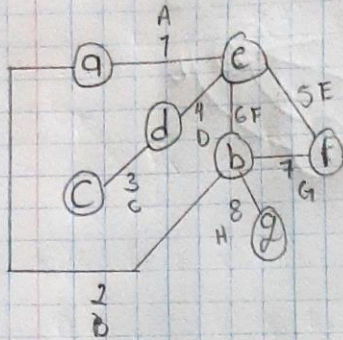


### Ejercicio 9

Díaz Hernández Marcos Bryan.

1) Dado el siguiente grafo:

a) Matriz de adyacencia.



|   | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| a | 0 | 2 | 0 | 0 | 1 | 0 | 0 |
| b | 2 | 0 | 0 | 0 | 6 | 7 | 8 |
| c | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| d | 0 | 0 | 3 | 0 | 4 | 0 | 0 |
| e | 1 | 6 | 0 | 4 | 0 | 5 | 0 |
| f | 0 | 7 | 0 | 0 | 5 | 0 | 0 |
| g | 0 | 8 | 0 | 0 | 0 | 0 | 0 |

b) Matriz de incidencia

|   | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| a | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| b | 0 | 2 | 0 | 0 | 0 | 6 | 7 | 8 |
| c | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| d | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 |
| e | 1 | 0 | 0 | 4 | 5 | 6 | 0 | 0 |
| f | 0 | 0 | 0 | 0 | 5 | 0 | 7 | 0 |
| g | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |

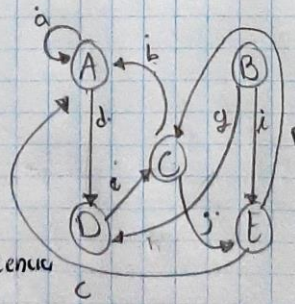
c) Lista de adyacencia.

- 1) |a| |c| |b|    2) |b| |f| |g| |e| |a|    3) |c| |d|  
4) |d| |e| |c|    5) |e| |b| |f| |d| |g|    6) |f| |b| |e|    7) |g| |b|

2) Dada la matriz de adyacencia de un grafo dirigido.

|   | A | B | C | D | E |
|---|---|---|---|---|---|
| A | 1 | 0 | 0 | 1 | 0 |
| B | 0 | 0 | 0 | 1 | 1 |
| C | 1 | 0 | 0 | 0 | 1 |
| D | 0 | 0 | 1 | 0 | 0 |
| E | 1 | 0 | 1 | 0 | 0 |

a) Dibujar grafo.



b) Matriz de incidencia

|   | a | b  | c  | d  | e  | f  | g  | h  | i  |
|---|---|----|----|----|----|----|----|----|----|
| A | 1 | -1 | -1 | 1  | 0  | 0  | 0  | 0  | 0  |
| B | 0 | 0  | 0  | 1  | 1  | 0  | 0  | 0  | 0  |
| C | 0 | 1  | 0  | 0  | -1 | -1 | 0  | 0  | 1  |
| D | 0 | 0  | 0  | -1 | 1  | 0  | -1 | 0  | 0  |
| E | 0 | 0  | 1  | 0  | 0  | 1  | 0  | -1 | -1 |

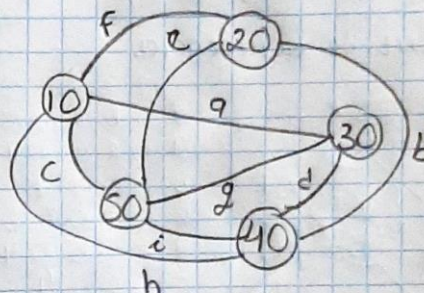
c) Lista de adyacencia

- A → A → D  
B → E → D  
C → A → E  
D → C  
E → A → C

3) dada la matriz de incidencia

|    | a | b | c | d | e | f | g | h | i |
|----|---|---|---|---|---|---|---|---|---|
| 10 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 |
| 20 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| 30 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| 40 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 50 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 |

a) Dibujar grafo.



b) Lista de adyacencia

|    | 10 | 20 | 30 | 40 | 50 |
|----|----|----|----|----|----|
| 10 | 0  | 1  | 1  | 1  | 1  |
| 20 | 1  | 0  | 0  | 1  | 1  |
| 30 | 1  | 0  | 0  | 1  | 1  |
| 40 | 1  | 1  | 1  | 0  | 1  |
| 50 | 1  | 1  | 1  | 1  | 0  |