

A adjacency matrix of A

$$\begin{matrix} & v_1 \\ \begin{matrix} v_1 \\ v_2 \\ v_3 \end{matrix} & \begin{bmatrix} 0 & 2 & 1 \\ 1 & 0 & 1 \\ 0 & 1 & 1 \end{bmatrix} \end{matrix}$$

Incidence matrix of A

$$\begin{matrix} & e_1 & e_2 & e_3 & e_4 & e_5 & e_6 & e_7 \\ \begin{matrix} v_1 \\ v_2 \\ v_3 \end{matrix} & \begin{bmatrix} 1 & 1 & -1 & 1 & 0 & 0 & 0 \\ -1 & -1 & 1 & 0 & 1 & -1 & 0 \\ 0 & 0 & 0 & -1 & -1 & 1 & 1 \end{bmatrix} \end{matrix}$$

2nd group

2nd graph

[illegible]