



$$A^0 = \begin{pmatrix} 0 & 4 & 5 \\ 2 & 0 & \infty \\ \infty & -3 & 0 \end{pmatrix}$$

through vertex 1

$$A^1 = \begin{pmatrix} 0 & 4 & 5 \\ 2 & 0 & 7 \\ \infty & -3 & 0 \end{pmatrix}$$

$$\Rightarrow \begin{matrix} 2 \rightarrow 3 & 2 \rightarrow 1 & 1 \rightarrow 3 \\ \infty & 2 & + 5 \end{matrix}$$

$$\min(\infty, 7) = 7$$

$$2 \rightarrow 3 = 7$$

$$\Rightarrow \begin{matrix} 3 \rightarrow 2 & 3 \rightarrow 1 & 1 \rightarrow 4 \\ -3 & \infty & \end{matrix}$$

$$\min(-3, \infty) = -3$$

$$3 \rightarrow 2 = -3$$

through vertex 2

$$A^2 = \begin{pmatrix} 0 & 4 & 5 \\ 2 & 0 & 7 \\ -1 & -3 & 0 \end{pmatrix}$$

$$\Rightarrow \begin{matrix} 1 \rightarrow 3 & 1 \rightarrow 2 & 2 \rightarrow 3 \\ 5 & 4 & 7 \end{matrix}$$

$$\min(5, 13) = 5$$

$$1 \rightarrow 3 = 5$$

$$\Rightarrow \begin{matrix} 3 \rightarrow 1 & 3 \rightarrow 2 & 2 \rightarrow 1 \\ \infty & -3 & 2 \end{matrix}$$

$$\min(\infty, -1) = -1$$

$$3 \rightarrow 1 = -1$$

through vertex 3

$$A^3 = \begin{pmatrix} 0 & 2 & 5 \\ 2 & 0 & 7 \\ -1 & -3 & 0 \end{pmatrix}$$

$$\Rightarrow \begin{matrix} 1 \rightarrow 2 & 1 \rightarrow 3 & 3 \rightarrow 2 \\ 4 & 5 & -8 \end{matrix}$$

$$\min(4, 2) = 2$$

$$1 \rightarrow 2 = 2$$

$$\Rightarrow \begin{matrix} 2 \rightarrow 1 & 2 \rightarrow 3 & 3 \rightarrow 1 \\ 2 & 7 & -1 \end{matrix} \quad \min(2, 6) = 2$$