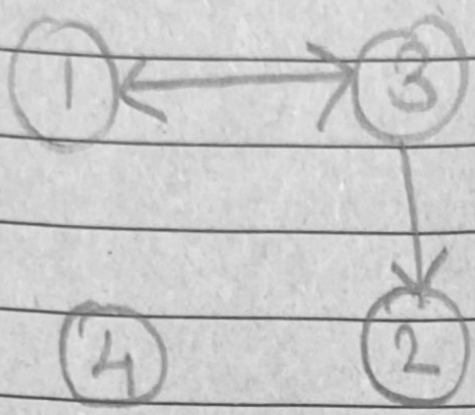

$|P_1| = 1$ $|P_2| = 0$

$|P_3| = 2$ $|P_4| = 0$

$$A = \begin{array}{c} \\ 1 \\ 2 \\ 3 \\ 4 \end{array} \begin{array}{c} \begin{array}{cccc} 1 & 2 & 3 & 4 \end{array} \\ \begin{bmatrix} 0 & 0 & 1/1 & 0 \\ 0 & 0 & 0 & 0 \\ 1/2 & 1/2 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix} \end{array}$$

$$D = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 1/4 & 1/4 & 1/4 & 1/4 \\ 1/2 & 1/2 & 0 & 0 \\ 1/4 & 1/4 & 1/4 & 1/4 \end{bmatrix}$$

$$H = \begin{bmatrix} 1/4 & 1/4 & 1/4 & 1/4 \\ 1/4 & 1/4 & 1/4 & 1/4 \\ 1/4 & 1/4 & 1/4 & 1/4 \\ 1/4 & 1/4 & 1/4 & 1/4 \end{bmatrix}$$

$\alpha = 0.2$

$$(0.8(A+D) + \alpha H)\,\bar{r}$$

$$0.8\begin{bmatrix} 0 & 0 & 1 & 0 \\ 1/4 & 1/4 & 1/4 & 1/4 \\ 1/2 & 1/2 & 0 & 0 \\ 1/4 & 1/4 & 1/4 & 1/4 \end{bmatrix} + 0.2\begin{bmatrix} 1/4 & 1/4 & 1/4 & 1/4 \\ 1/4 & 1/4 & 1/4 & 1/4 \\ 1/4 & 1/4 & 1/4 & 1/4 \\ 1/4 & 1/4 & 1/4 & 1/4 \end{bmatrix}$$

$$= \begin{bmatrix} 0 & 0 & \frac{4}{5} & 0 \\ 1/5 & 1/5 & 1/5 & 1/5 \\ \frac{2}{5} & \frac{2}{5} & 0 & 0 \\ 1/5 & 1/5 & 1/5 & 1/5 \end{bmatrix} + \begin{bmatrix} \frac{0.25}{5} & \frac{0.25}{5} & - & - \\ - & - & - & - \\ - & - & - & - \\ - & - & - & - \end{bmatrix} \cdot \bar{r}$$

$$= \cdot\bar{r}$$

$$\begin{matrix} \frac{0.25}{S} & \frac{0.25}{S} & \frac{4.25}{S} & \frac{0.25}{S} \\ \frac{1.25}{S} & \frac{1.25}{S} & \frac{1.25}{S} & \frac{1.25}{S} \\ \frac{2.25}{S} & \frac{2.25}{S} & \frac{0.25}{S} & \frac{0.25}{S} \\ \frac{1.25}{S} & \frac{1.25}{S} & \frac{1.25}{S} & \frac{1.25}{S} \end{matrix} \cdot \begin{pmatrix} \frac{1}{4} & \frac{1}{4} & \frac{1}{4} & \frac{1}{4} \end{pmatrix}$$

$$= \begin{matrix} \frac{0.25+0.25+4.25+0.25}{20} \\ \frac{1.25+1.25+1.25+1.25}{20} \\ \frac{2.25+2.25+0.5}{20} \\ \frac{4+1.25}{20} \end{matrix}$$