$$For\ target\ State\ 6, we\ consider$$

$$\sum\nolimits_{?} = \{s_1, s_2, s_3, s_4\}$$

$$(I - A) = \begin{pmatrix} 1 & -1/2 & 0 & -1/2 \\ -1/3 & 1 & -1/3 & 0 \\ 0 & -3/4 & 1 & -1/4 \\ 0 & 0 & -4/5 & 1 \end{pmatrix}$$

$$x = \begin{bmatrix} s_1 \\ s_2 \\ s_3 \\ s_4 \end{bmatrix}$$

$$b = \begin{pmatrix} 0 \\ 1/3 \\ 0 \\ 0 \end{pmatrix}$$

Such that holds:

$$(I - A) * x = b$$

Gaussian elimination yields:

$$\begin{pmatrix} s_1 \\ s_2 \\ s_3 \\ s_4 \end{pmatrix} = \begin{pmatrix} 14/19 \\ 16/19 \\ 15/19 \\ 12/19 \end{pmatrix}$$

Thus the probability of reaching state 6 from state 1 is the probability as yielded by the elimination: 14/19, thus 73,7%.