Illustration of Terms a(3)-a(7) for A01055 and A360031.

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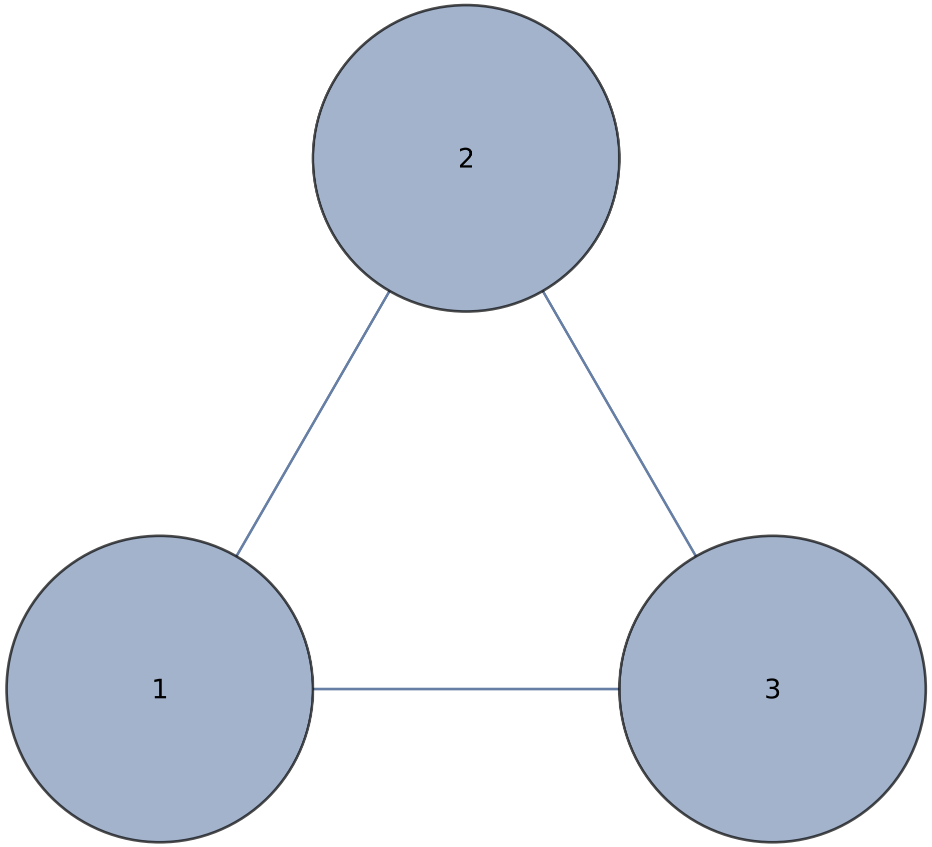
Description

The following diagrams show all 2-connected graphs as counted in A010355 with up to 7 edges. For each network the upper triangle of the symmetrical matrix of resistance distances is shown. On the graphs of the networks, nodes between which there is a resistance of 1 ohm are marked with the same color, not gray. The number of networks with n edges in which at least one resistance distance of 1 ohm occurs are the terms a(n) of the present sequence A360031.

A010355(3) = 1

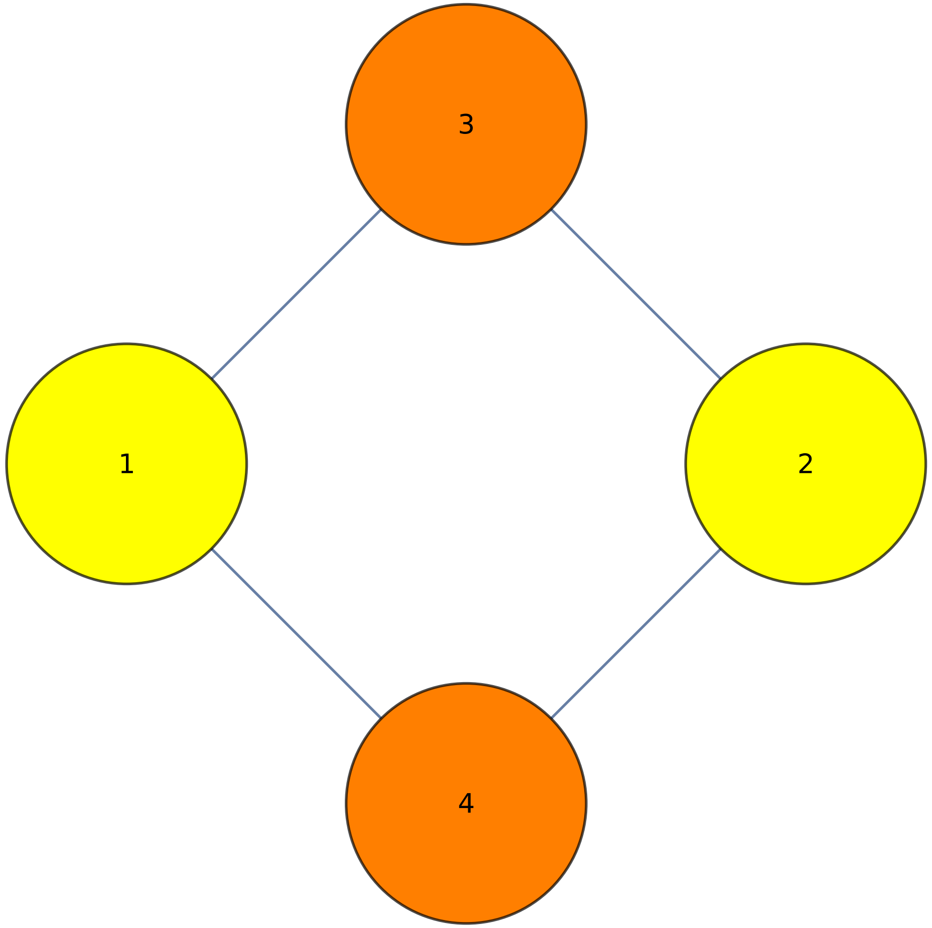
a(3) = 0

$$\begin{pmatrix} 0 & \frac{2}{3} & \frac{2}{3} \\ 0 & 0 & \frac{2}{3} \\ 0 & 0 & 0 \end{pmatrix}$$



A010355(4) = 1

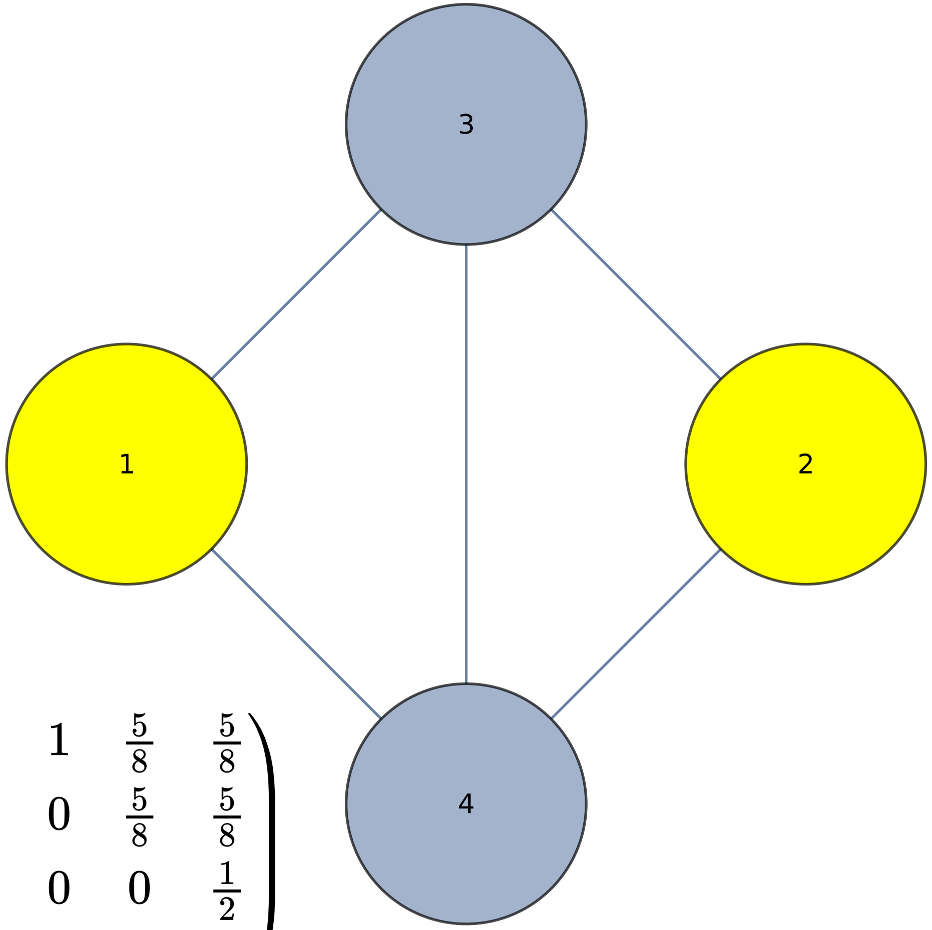
a(4) = 1



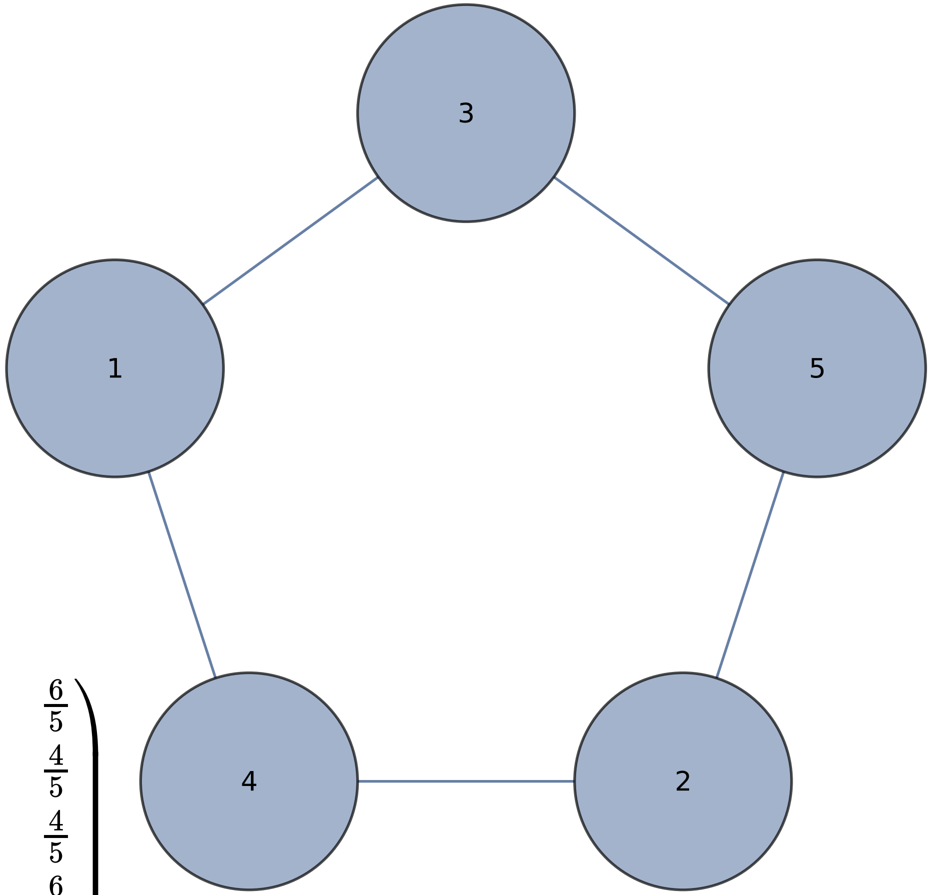
$$\begin{pmatrix} 0 & 1 & \frac{3}{4} & \frac{3}{4} \\ 0 & 0 & \frac{3}{4} & \frac{3}{4} \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \end{pmatrix}$$

A010355(5) = 2

a(5) = 1



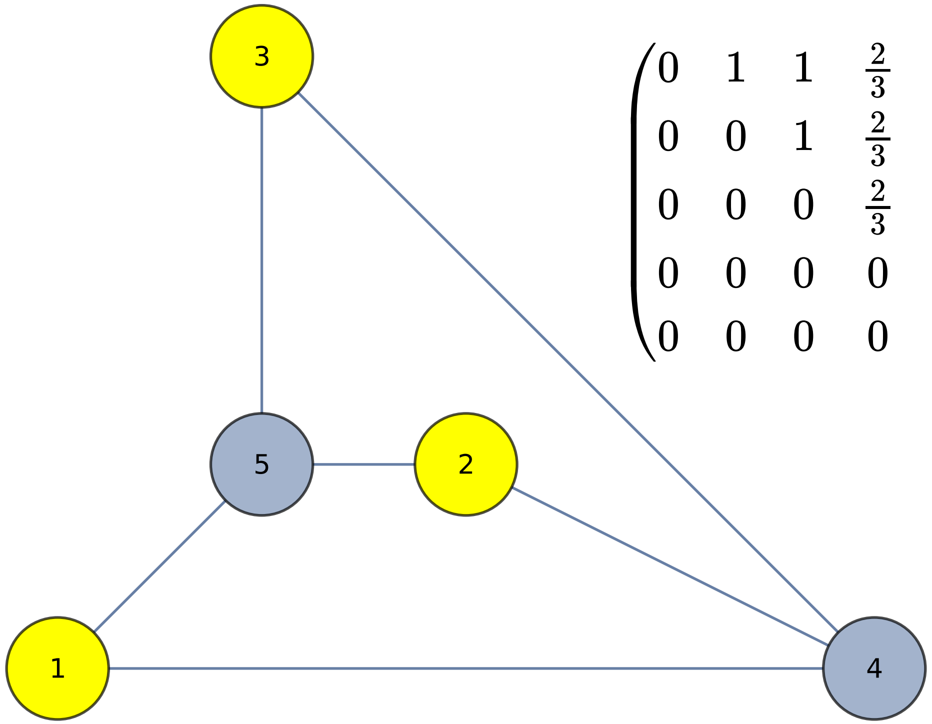
$$\begin{pmatrix} 0 & 1 & \frac{5}{8} & \frac{5}{8} \\ 0 & 0 & \frac{5}{8} & \frac{5}{8} \\ 0 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & 0 & 0 \end{pmatrix}$$



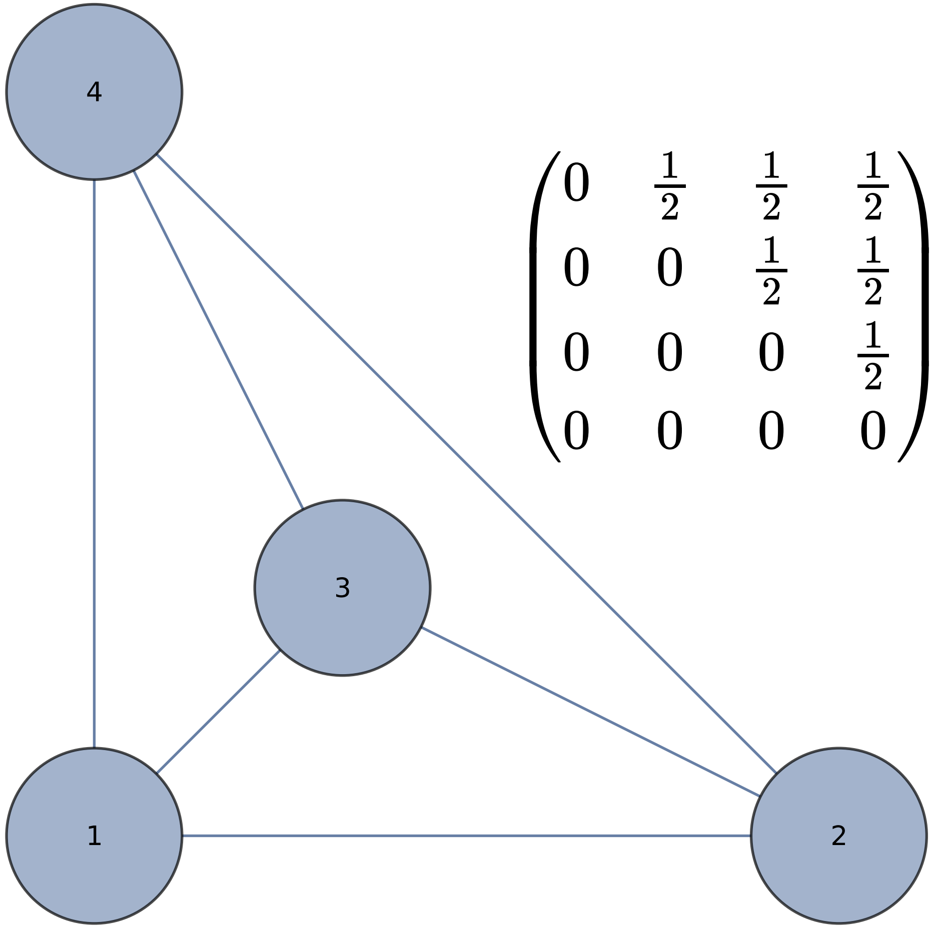
$$\begin{pmatrix} 0 & \frac{6}{5} & \frac{4}{5} & \frac{4}{5} & \frac{6}{5} \\ 0 & 0 & \frac{6}{5} & \frac{4}{5} & \frac{4}{5} \\ 0 & 0 & 0 & \frac{6}{5} & \frac{4}{5} \\ 0 & 0 & 0 & 0 & \frac{6}{5} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$

A010355(6) = 4

a(6) = 1

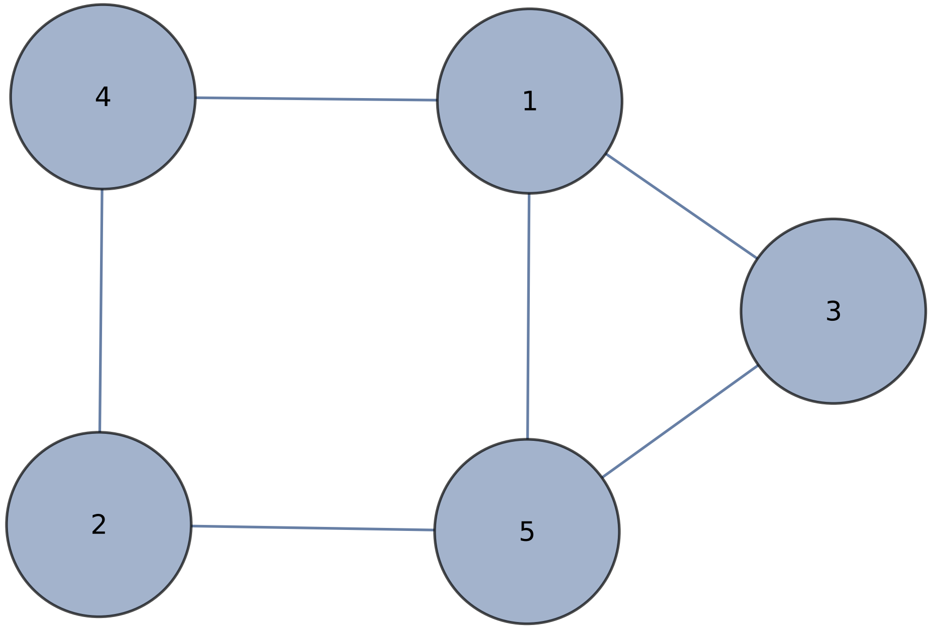


$$\begin{pmatrix} 0 & 1 & 1 & \frac{2}{3} & \frac{2}{3} \\ 0 & 0 & 1 & \frac{2}{3} & \frac{2}{3} \\ 0 & 0 & 0 & \frac{2}{3} & \frac{2}{3} \\ 0 & 0 & 0 & 0 & \frac{2}{3} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$

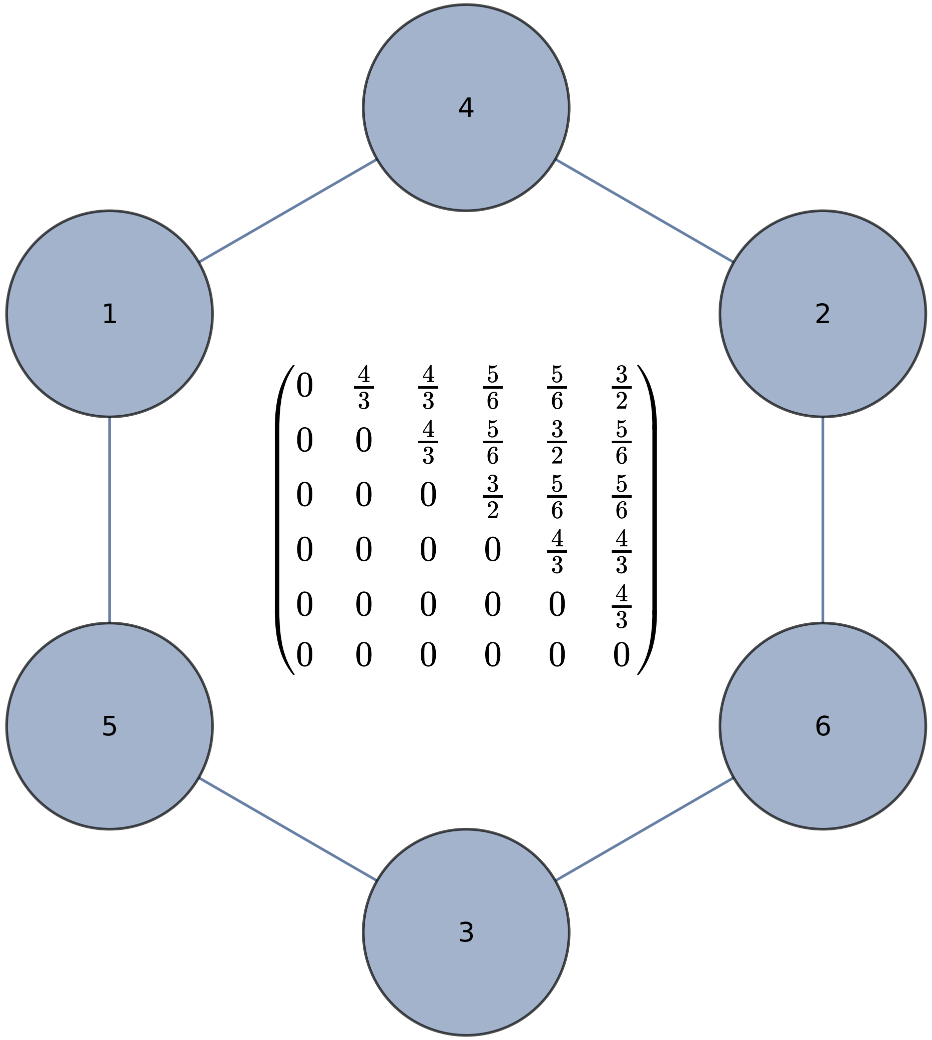


$$\begin{pmatrix} 0 & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} \\ 0 & 0 & \frac{1}{2} & \frac{1}{2} \\ 0 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & 0 & 0 \end{pmatrix}$$

A010355(6) = 4
continued



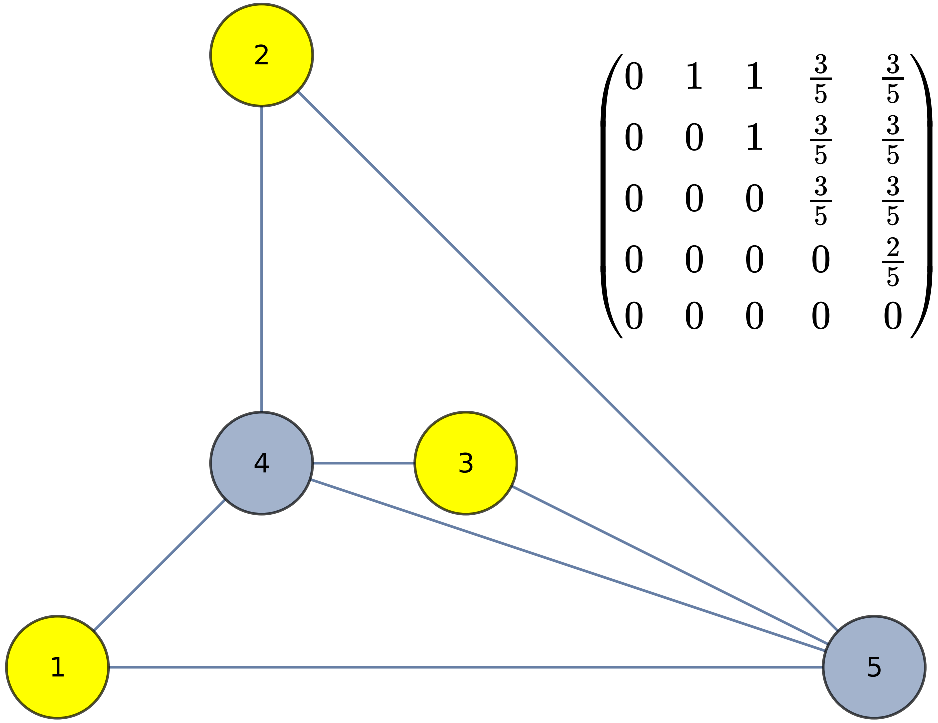
$$\begin{pmatrix} 0 & \frac{10}{11} & \frac{7}{11} & \frac{8}{11} & \frac{6}{11} \\ 0 & 0 & \frac{13}{11} & \frac{8}{11} & \frac{8}{11} \\ 0 & 0 & 0 & \frac{13}{11} & \frac{7}{11} \\ 0 & 0 & 0 & 0 & \frac{10}{11} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$



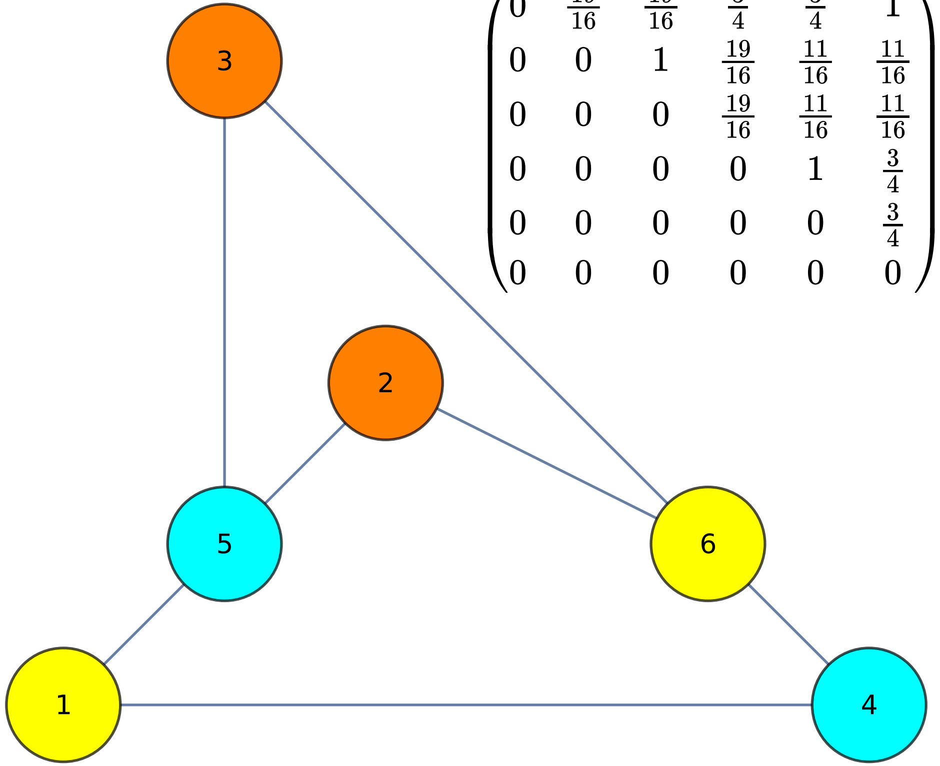
$$\begin{pmatrix} 0 & \frac{4}{3} & \frac{4}{3} & \frac{5}{6} & \frac{5}{6} & \frac{3}{2} \\ 0 & 0 & \frac{4}{3} & \frac{5}{6} & \frac{3}{2} & \frac{5}{6} \\ 0 & 0 & 0 & \frac{3}{2} & \frac{5}{6} & \frac{5}{6} \\ 0 & 0 & 0 & 0 & \frac{4}{3} & \frac{4}{3} \\ 0 & 0 & 0 & 0 & 0 & \frac{4}{3} \\ 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$

A010355(7) = 7

a(7) = 2



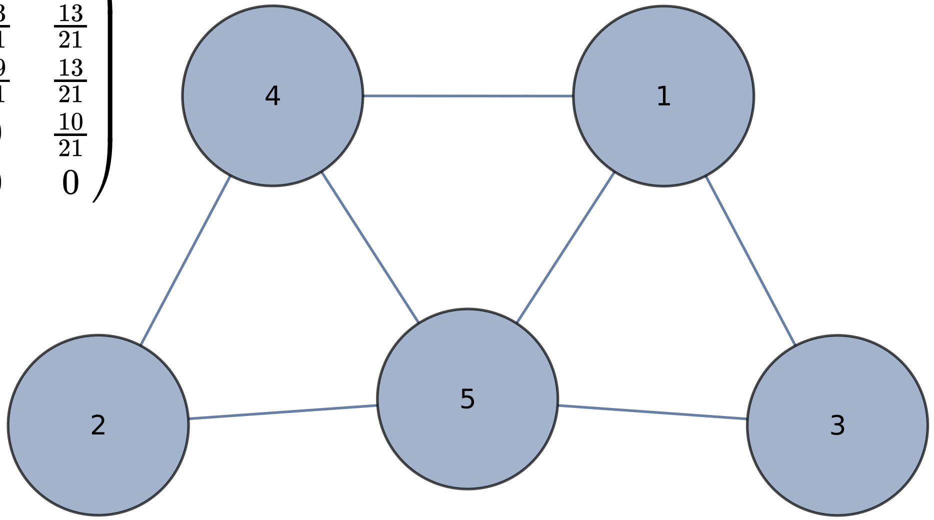
$$\begin{pmatrix} 0 & 1 & 1 & \frac{3}{5} & \frac{3}{5} \\ 0 & 0 & 1 & \frac{3}{5} & \frac{3}{5} \\ 0 & 0 & 0 & \frac{3}{5} & \frac{3}{5} \\ 0 & 0 & 0 & 0 & \frac{2}{5} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$

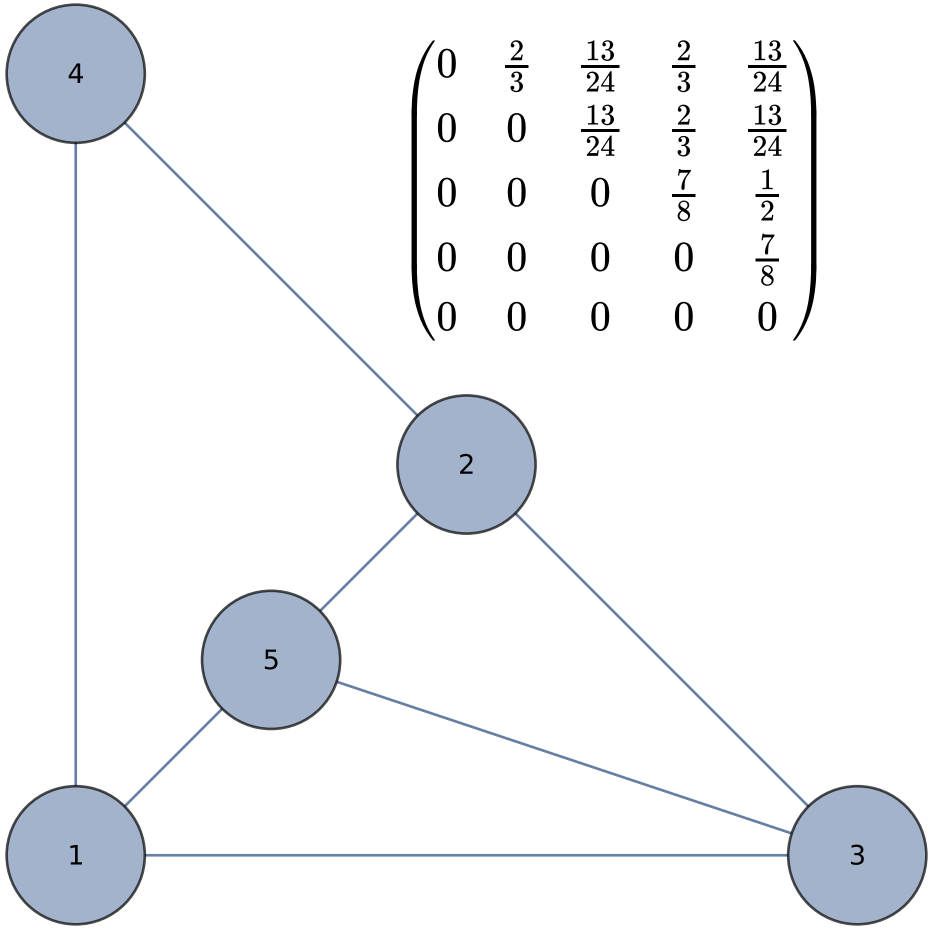


$$\begin{pmatrix} 0 & \frac{19}{16} & \frac{19}{16} & \frac{3}{4} & \frac{3}{4} & 1 \\ 0 & 0 & 1 & \frac{19}{16} & \frac{11}{16} & \frac{11}{16} \\ 0 & 0 & 0 & \frac{19}{16} & \frac{11}{16} & \frac{11}{16} \\ 0 & 0 & 0 & 0 & 1 & \frac{3}{4} \\ 0 & 0 & 0 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$

A010355(7) = 7
continued

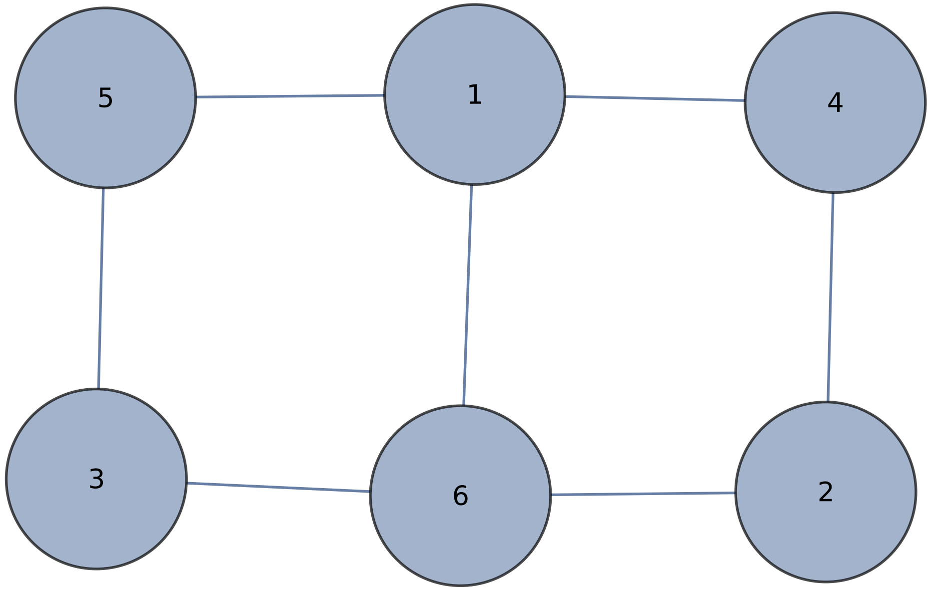
$$\begin{pmatrix} 0 & \frac{19}{21} & \frac{13}{21} & \frac{4}{7} & \frac{10}{21} \\ 0 & 0 & \frac{8}{7} & \frac{13}{21} & \frac{13}{21} \\ 0 & 0 & 0 & \frac{19}{21} & \frac{13}{21} \\ 0 & 0 & 0 & 0 & \frac{10}{21} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$



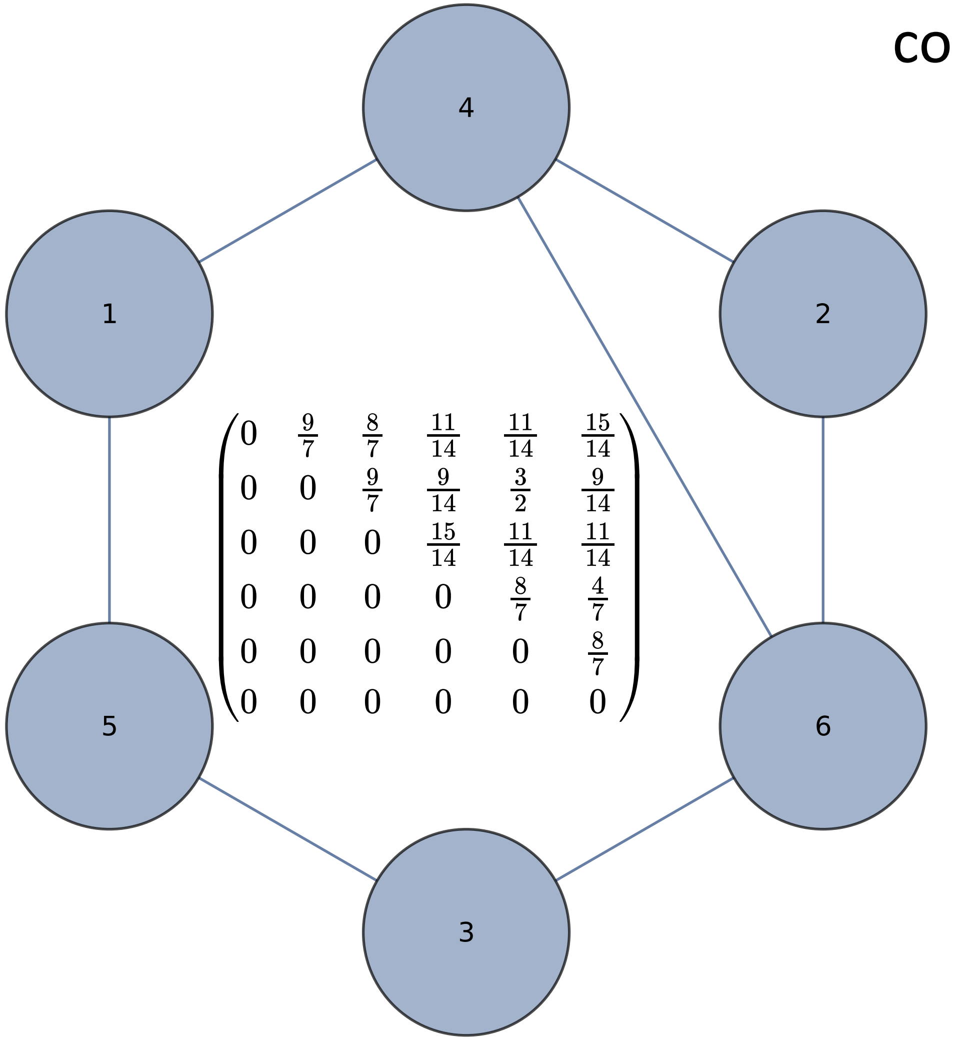


$$\begin{pmatrix} 0 & \frac{2}{3} & \frac{13}{24} & \frac{2}{3} & \frac{13}{24} \\ 0 & 0 & \frac{13}{24} & \frac{2}{3} & \frac{13}{24} \\ 0 & 0 & 0 & \frac{7}{8} & \frac{1}{2} \\ 0 & 0 & 0 & 0 & \frac{7}{8} \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$

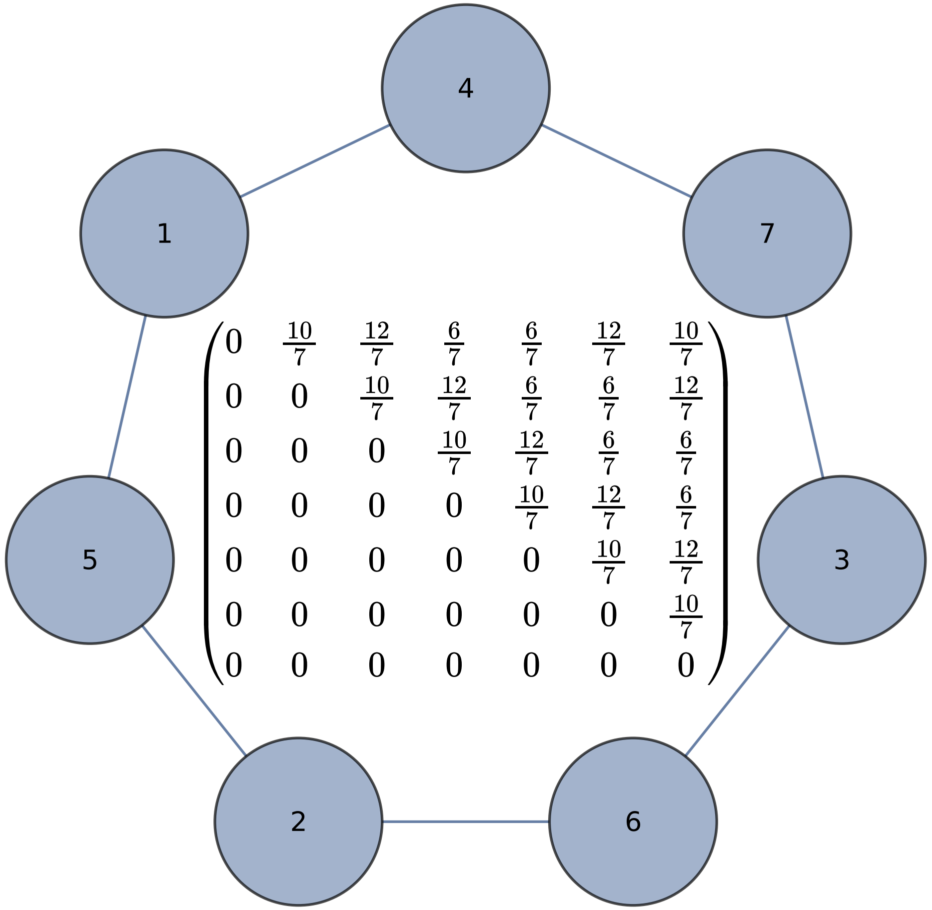
$$\begin{pmatrix} 0 & \frac{14}{15} & \frac{14}{15} & \frac{11}{15} & \frac{11}{15} & \frac{3}{5} \\ 0 & 0 & \frac{4}{3} & \frac{11}{15} & \frac{7}{5} & \frac{11}{15} \\ 0 & 0 & 0 & \frac{7}{5} & \frac{11}{15} & \frac{11}{15} \\ 0 & 0 & 0 & 0 & \frac{4}{3} & \frac{14}{15} \\ 0 & 0 & 0 & 0 & 0 & \frac{14}{15} \\ 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$



A010355(7) = 7
continued



$$\begin{pmatrix} 0 & \frac{9}{7} & \frac{8}{7} & \frac{11}{14} & \frac{11}{14} & \frac{15}{14} \\ 0 & 0 & \frac{9}{7} & \frac{9}{14} & \frac{3}{2} & \frac{9}{14} \\ 0 & 0 & 0 & \frac{15}{14} & \frac{11}{14} & \frac{11}{14} \\ 0 & 0 & 0 & 0 & \frac{8}{7} & \frac{4}{7} \\ 0 & 0 & 0 & 0 & 0 & \frac{8}{7} \\ 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$



$$\begin{pmatrix} 0 & \frac{10}{7} & \frac{12}{7} & \frac{6}{7} & \frac{6}{7} & \frac{12}{7} & \frac{10}{7} \\ 0 & 0 & \frac{10}{7} & \frac{12}{7} & \frac{6}{7} & \frac{6}{7} & \frac{12}{7} \\ 0 & 0 & 0 & \frac{10}{7} & \frac{12}{7} & \frac{6}{7} & \frac{6}{7} \\ 0 & 0 & 0 & 0 & \frac{10}{7} & \frac{12}{7} & \frac{6}{7} \\ 0 & 0 & 0 & 0 & 0 & \frac{10}{7} & \frac{12}{7} \\ 0 & 0 & 0 & 0 & 0 & 0 & \frac{10}{7} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$