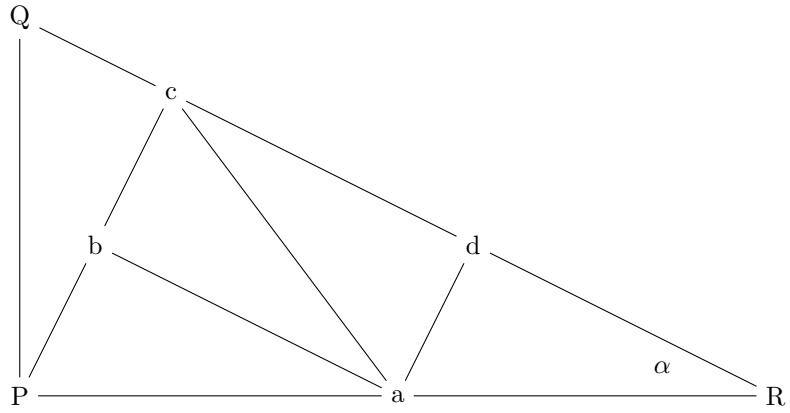
Pinwheel

The structure of the pinwheel tiling is as follows

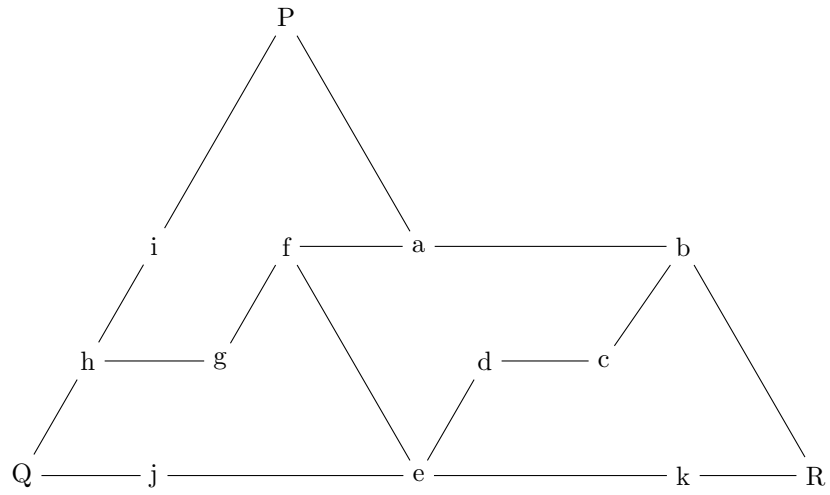


it is trivial to see that

$$
\begin{aligned}
a &= Q + \frac{QP}{2} \\
b &= \text{polar}\left(\frac{1}{\sqrt{5}}\left|QP\right|, \text{phase}\left(QP\right) - \alpha\right) \\
c &= \text{polar}\left(\frac{2}{\sqrt{5}}\left|QP\right|, \text{phase}\left(QP\right) - \alpha\right) \\
d &= \text{polar}\left(\frac{2}{\sqrt{5}}\left|Ra\right|, \text{phase}\left(Ra\right) - \alpha\right)
\end{aligned}
$$

Sphinx

The structure of the sphinx tiling is as follows



Let

$$Qh = \frac{1}{4}QP$$
$$Qj = \frac{1}{6}QR$$

then by definition

$$h = Q + Qh \qquad j = Q + Qj \qquad f = h + Qj \qquad a = i + 2Qj$$
$$i = Q + 2Qh \qquad e = Q + 3Qj \qquad g = i + Qj \qquad d = h + 3Qj$$
$$k = Q + 5Qj \qquad b = h + 4Qj$$
$$c = i + 4Qj$$