Pensieve header: Just colour-coded A-matrices.

In[∘]:=
```
SetDirectory["C:\\drorbn\\AcademicPensieve\\Projects\\APAI"];
```

In[∘]:=
```
Once[<< KnotTheory`; << Rot.m];
```

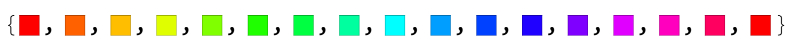
```
Loading KnotTheory` version of February 2, 2020, 10:53:45.2097.
Read more at http://katlas.org/wiki/KnotTheory.
```

```
Loading Rot.m from http://drorbn.net/APAI to compute rotation numbers.
```

In[∘]:=
```
R1[s_, i_, j_] := s (g_{ji} (g_{j+,j} + g_{j,j+} - g_{ij}) - g_{ii} (g_{j,j+} - 1) - 1/2);
ρ[K_] := ρ[K] = Module[{Cs, φ, n, A, s, i, j, k, Δ, G, ρ1},
    {Cs, φ} = Rot[K]; n = Length[Cs];
    A = IdentityMatrix[2 n + 1];
    Cases[Cs, {s_, i_, j_} :> (A[[{i, j}, {i + 1, j + 1}]] += ( -T^s  T^s - 1 ; 0  -1 ))];
    Δ = T^((-Total[φ] - Total[Cs[[All,1]]])/2) Det[A];
    G = Inverse[A];
    ρ1 = Sum_{k=1}^{n} R1 @@ Cs[[k]] - Sum_{k=1}^{2 n} φ[[k]] (g_{kk} - 1/2);
    Factor@{Δ, Δ^2 ρ1 /. α_^+ :> α + 1 /. g_{α_,β_} :> G[[α, β]]}];
```

In[∘]:=
```
Table[Hue[k / 16], {k, 0, 16}]
```

Out[∘]=



In[∘]:=
```
ColouredA[K_] := Module[{Cs, φ, n, A, α, β, k, s, i, j},
  {Cs, φ} = Rot[K]; n = Length[Cs];
  A = IdentityMatrix[2 n + 1];
  For[k = 1, k ≤ n, k++,
   {s, i, j} = Cs[[k]];
   A[[{i, j}, {i + 1, j + 1}]] += Map[Style[#, Background → Hue[k/(2 n)]] &, ( -T^s  T^s - 1 ; "0"  -1 ), {2}]
  ];
  MatrixForm[A]
 ]
```

In[∘]:= `ColouredA[Knot[3, 1]]`

Out[∘]//MatrixForm=

$$\begin{pmatrix} 1 & -1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & -\frac{1}{T} & 0 & 0 & -1+\frac{1}{T} & 0 \\ 0 & 0 & 1 & -1 & 0 & 0 & 0 \\ 0 & -1+\frac{1}{T} & 0 & 1 & -\frac{1}{T} & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & -1 & 0 \\ 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 1 & -\frac{1}{T} \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix}$$

In[∘]:= `ColouredA[Knot[4, 1]]`

Out[∘]//MatrixForm=

$$\begin{pmatrix} 1 & -T & 0 & 0 & -1+T & 0 & 0 & 0 & 0 \\ 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & -1+\frac{1}{T} & 0 & 0 \\ 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & -T & 0 & 0 & -1+T \\ 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 \\ 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix}$$

In[∘]:= `ColouredA[Knot[6, 3]]`

KnotTheory: Loading precomputed data in PD4Knots`.

Out[∘]//MatrixForm=

$$\begin{pmatrix} 1 & -T & 0 & 0 & -1+T & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & -T & 0 & 0 & 0 & 0 & -1+T & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & -1+T & 0 & 0 & 0 & 1 & -T & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & -1+\frac{1}{T} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix}$$

In[∘]:= `Do[Echo[K → ColouredA[K]], {K, AllKnots[{3, 7}]}];`

» Knot[3, 1] →

$$\begin{pmatrix} 1 & -1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & -\frac{1}{T} & 0 & 0 & -1+\frac{1}{T} & 0 \\ 0 & 0 & 1 & -1 & 0 & 0 & 0 \\ 0 & -1+\frac{1}{T} & 0 & 1 & -\frac{1}{T} & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & -1 & 0 \\ 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 1 & -\frac{1}{T} \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 \end{pmatrix}$$

» Knot[4, 1] →

$$\begin{pmatrix}
1 & -T & 0 & 0 & -1+T & 0 & 0 & 0 & 0 \\
0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & -1+\frac{1}{T} & 0 & 0 \\
0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 1 & -T & 0 & 0 & -1+T \\
0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 \\
0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1
\end{pmatrix}$$

» Knot[5, 1] →

$$\begin{pmatrix}
1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 \\
0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 \\
0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 \\
0 & -1+\frac{1}{T} & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 \\
0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 \\
0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 1 & -\frac{1}{T} \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1
\end{pmatrix}$$

» Knot[5, 2] →

$$\begin{pmatrix}
1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 \\
0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & -1+\frac{1}{T} & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & -1+\frac{1}{T} & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 \\
0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 \\
0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 1 & -\frac{1}{T} \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1
\end{pmatrix}$$

» Knot[6, 1] →

$$\begin{pmatrix}
1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & -T & 0 & 0 & 0 & 0 & 0 & 0 & -1+T & 0 & 0 & 0 \\
0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & -1+\frac{1}{T} & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & -1+T & 0 & 0 & 0 & 1 & -T & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 1 & -\frac{1}{T} & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 \\
0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1
\end{pmatrix}$$

» Knot[6, 2] →

$$\begin{pmatrix}
1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & -T & 0 & 0 & 0 & 0 & 0 & 0 & -1+T & 0 & 0 & 0 \\
0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & -1+\frac{1}{T} & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & -1+T & 0 & 0 & 0 & 1 & -T & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 1 & -\frac{1}{T} \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1
\end{pmatrix}$$

» Knot[6, 3] →

$$\begin{pmatrix}
1 & -T & 0 & 0 & -1+T & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & -T & 0 & 0 & 0 & 0 & -1+T & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & -1+T & 0 & 0 & 0 & 1 & -T & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & -1+\frac{1}{T} \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1
\end{pmatrix}$$

» Knot[7, 1] →

$$\begin{pmatrix}
1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & -1+\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1
\end{pmatrix}$$

» Knot[7, 2] →

$$\begin{pmatrix}
1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & -1+\frac{1}{T} & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 1 & -\frac{1}{T} & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 \\
0 & 0 & 0 & 0 & 0 & -1+\frac{1}{T} & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{T} \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1
\end{pmatrix}$$

» Knot[7, 3] →

$$\begin{pmatrix}
1 & -T & 0 & 0 & 0 & 0 & -1+T & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & -T & 0 & 0 & 0 & 0 & 0 & 0 & -1+T & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 1 & -T & 0 & 0 & 0 & 0 & 0 & 0 & -1+T & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 1 & -T & 0 & 0 & 0 & 0 & 0 & 0 & -1+T \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & -1+T & 0 & 0 & 0 & 0 & 0 & 1 & -T & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & -1+T & 0 & 0 & 0 & 0 & 0 & 1 & -T & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1+T & 0 & 0 & 0 & 1 & -T & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1
\end{pmatrix}$$

» Knot[7, 4] →

$$\begin{pmatrix}
1 & -T & 0 & 0 & 0 & 0 & -1+T & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & -T & 0 & 0 & 0 & 0 & 0 & 0 & -1+T & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 1 & -T & 0 & 0 & 0 & 0 & 0 & 0 & -1+T & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 1 & -T & 0 & 0 & 0 & 0 & 0 & 0 & -1+T \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & -1+T & 0 & 0 & 0 & 1 & -T & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 & 0 & 0 \\
0 & 0 & -1+T & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -T & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -1+T & 0 & 0 & 0 & 1 & -T & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -1 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1
\end{pmatrix}$$

» Knot[7, 5] →

1	-1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	$-\frac{1}{T}$	0	0	0	0	0	0	$-1+\frac{1}{T}$	0	0	0	0	0
0	0	1	-1	0	0	0	0	0	0	0	0	0	0	0
0	$-1+\frac{1}{T}$	0	1	$-\frac{1}{T}$	0	0	0	0	0	0	0	0	0	0
0	0	0	0	1	-1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	$-\frac{1}{T}$	0	0	0	0	0	0	$-1+\frac{1}{T}$	0
0	0	0	0	0	0	1	-1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	$-\frac{1}{T}$	0	0	$-1+\frac{1}{T}$	0	0	0
0	0	0	0	0	0	0	0	1	-1	0	0	0	0	0
0	0	0	$-1+\frac{1}{T}$	0	0	0	0	0	1	$-\frac{1}{T}$	0	0	0	0
0	0	0	0	0	0	0	0	0	0	1	-1	0	0	0
0	0	0	0	0	$-1+\frac{1}{T}$	0	0	0	0	0	1	$-\frac{1}{T}$	0	0
0	0	0	0	0	0	0	0	0	0	0	0	1	-1	0
0	0	0	0	0	0	0	$-1+\frac{1}{T}$	0	0	0	0	0	1	$-\frac{1}{T}$
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

» Knot[7, 6] →

1	-1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	$-\frac{1}{T}$	0	0	0	0	$-1+\frac{1}{T}$	0	0	0	0	0	0	0
0	0	1	-1	0	0	0	0	0	0	0	0	0	0	0
0	$-1+\frac{1}{T}$	0	1	$-\frac{1}{T}$	0	0	0	0	0	0	0	0	0	0
0	0	0	0	1	-1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	$-\frac{1}{T}$	0	0	0	0	$-1+\frac{1}{T}$	0	0	0
0	0	0	0	0	0	1	-1	0	0	0	0	0	0	0
0	0	0	$-1+\frac{1}{T}$	0	0	0	1	$-\frac{1}{T}$	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1	-1	0	0	0	0	0
0	0	0	0	0	0	0	0	0	1	-T	0	0	-1 + T	0
0	0	0	0	0	0	0	0	0	0	1	-1	0	0	0
0	0	0	0	0	$-1+\frac{1}{T}$	0	0	0	0	0	1	$-\frac{1}{T}$	0	0
0	0	0	0	0	0	0	0	0	0	0	0	1	-1	0
0	0	0	0	0	0	0	0	0	-1 + T	0	0	0	1	-T
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

» Knot[7, 7] →

1	-1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	-T	0	0	0	0	0	0	-1 + T	0	0	0	0	0
0	0	1	-1	0	0	0	0	0	0	0	0	0	0	0
0	$-1+\frac{1}{T}$	0	1	$-\frac{1}{T}$	0	0	0	0	0	0	0	0	0	0
0	0	0	0	1	-1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	-T	0	0	0	0	0	0	-1 + T	0
0	0	0	0	0	0	1	-1	0	0	0	0	0	0	0
0	0	0	-1 + T	0	0	0	1	-T	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1	-1	0	0	0	0	0
0	0	0	0	0	$-1+\frac{1}{T}$	0	0	0	1	$-\frac{1}{T}$	0	0	0	0
0	0	0	0	0	0	0	0	0	0	1	-1	0	0	0
0	0	0	0	0	0	0	-1 + T	0	0	0	1	-T	0	0
0	0	0	0	0	0	0	0	0	0	0	0	1	-1	0
0	0	0	0	0	0	0	0	0	0	0	$-1+\frac{1}{T}$	0	1	$-\frac{1}{T}$
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1