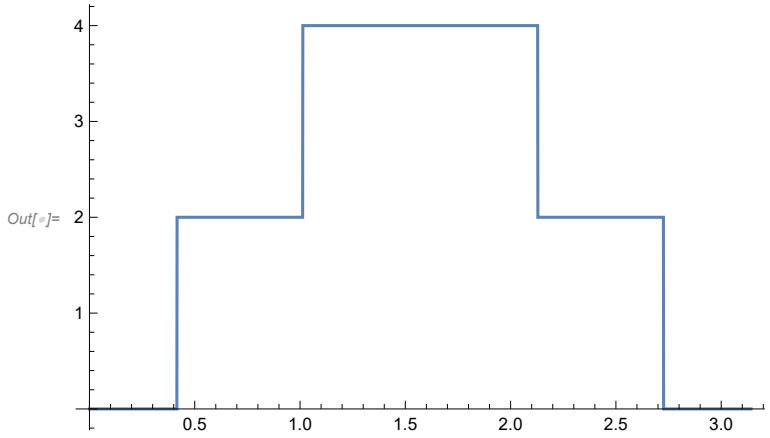
```
In[•]:= Clear[λ];
        K = Knot[8, 2]
Out[•]= Knot[8, 2]

In[•]:= soup = Times @@ PD[K] /. x : X[i_, j_, k_, l_] :> If[PositiveQ[x],
            a[j, i] a[k, -j] a[-l, -k] a[-i, l],
            a[-j, i] a[k, j] a[l, -k] a[-i, -l] ]
Out[•]= a[-16, 9] a[-15, -9] a[-14, 7] a[-13, -7] a[-12, 5] a[-11, 2] a[-10, -4]
         a[-9, -1] a[-8, 15] a[-7, -15] a[-6, 13] a[-5, -13] a[-4, 1] a[-3, 10] a[-2, -12]
         a[-1, -5] a[1, -10] a[2, 4] a[3, 11] a[4, -11] a[5, -2] a[6, 12] a[7, -14] a[8, 14]
         a[9, -16] a[10, 16] a[11, 3] a[12, -3] a[13, -6] a[14, 6] a[15, -8] a[16, 8]

In[•]:= cs = soup //. a[i_, x___, j_] a[j_, y___, k_] :> a[i, x, j, y, k]
Out[•]= a[-16, 9, -16] a[-14, 7, -14] a[-8, 15, -8] a[-6, 13, -6]
         a[3, 11, 3] a[1, -10, -4, 1] a[4, -11, 2, 4] a[5, -2, -12, 5]
         a[-1, -5, -13, -7, -15, -9, -1] a[-3, 10, 16, 8, 14, 6, 12, -3]

In[•]:= A = Table[0, Length@cs, Length@cs]
Out[•]= {{0, 0, 0, 0, 0, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 0, 0, 0, 0, 0, 0},
         {0, 0, 0, 0, 0, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 0, 0, 0, 0, 0, 0},
         {0, 0, 0, 0, 0, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 0, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 0, 0, 0, 0, 0, 0},
         {0, 0, 0, 0, 0, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 0, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 0, 0, 0, 0, 0, 0}}

In[•]:= t = 1 - λ^2; r = t + t*;

In[•]:= {t, r}
Out[•]= {1 - λ^2, 2 - λ^2 - Conjugate[λ]^2}

In[•]:= Times @@ PD[K] /. x : X[i_, j_, k_, l_] :> (
          aps = If[PositiveQ[x], {j, k, -l, -i}, {-j, k, l, -i}];
          is = Position[cs, #][[1, 1]] & /@ aps;
          A[[is, is]] += If[PositiveQ[x],
            {{0, t*, 0, -t*}, {t, -r, -t*, 2 t*}, {0, -t, 0, t}, {-t, 2 t, t*, -r}},
            {{r, -t, -2 t*, t*}, {-t*, 0, t*, 0}, {-2 t, t, r, -t*}, {t, 0, -t, 0}}
          ]
        )
Out[•]= {{0, 0, 0, 0}, {0, 0, 0, 0},
         {0, 0, (4 - 2 λ^2 - 2 Conjugate[λ]^2)^4 (2 - λ^2 - Conjugate[λ]^2)^4, 0}, {0, 0, 0, 0}}
```

In[•]:=
```
A
```

Out[•]=
```
{{4 - 2 λ^2 - 2 Conjugate[λ]^2, 0, -2 × (1 - λ^2), 0, 0, -2 × (1 - Conjugate[λ]^2), 0, 0, 0, 0},
 {0, 4 - 2 λ^2 - 2 Conjugate[λ]^2, -2 × (1 - Conjugate[λ]^2), -2 × (1 - λ^2), 0, 0, 0, 0, 0, 0},
 {-2 × (1 - Conjugate[λ]^2), -2 × (1 - λ^2), 4 - 2 λ^2 - 2 Conjugate[λ]^2, 0, 0, 0, 0, 0, 0, 0},
 {0, -2 × (1 - Conjugate[λ]^2), 0, 4 - 2 λ^2 - 2 Conjugate[λ]^2, 0, 0, 0, -2 × (1 - λ^2), 0, 0},
 {0, 0, 0, 0, 0, 0, 0, 0, 0, 0}, {-2 × (1 - λ^2), 0, 0, 0, 0, 4 - 2 λ^2 - 2 Conjugate[λ]^2,
  -2 + 2 λ^2, -2 × (1 - Conjugate[λ]^2), 0, 2 - 2 λ^2}, {0, 0, 0, 0, 0, -2 + 2 Conjugate[λ]^2,
  -4 + 2 λ^2 + 2 Conjugate[λ]^2, 2 - 2 Conjugate[λ]^2, 0, 2 × (1 - λ^2) + 2 × (1 - Conjugate[λ]^2)},
 {0, 0, 0, -2 × (1 - Conjugate[λ]^2), 0, -2 × (1 - λ^2), 2 - 2 λ^2, 4 - 2 λ^2 - 2 Conjugate[λ]^2,
  0, -2 + 2 λ^2}, {0, 0, 0, 0, 0, 0, 0, 0, 0, 0}, {0, 0, 0, 0, 0, 2 - 2 Conjugate[λ]^2,
  2 × (1 - λ^2) + 2 × (1 - Conjugate[λ]^2), -2 + 2 Conjugate[λ]^2, 0, -4 + 2 λ^2 + 2 Conjugate[λ]^2}}
```

In[•]:=
```
Plot[MatrixSignature[A /. λ → e^(i t)], {t, 0, π}]
```

Out[•]=



In[•]:=

```
Bed[K_, λ_] := Module[{soup, a, cs, A, is, t, r},
  t = 1 - λ^2; r = t + t*;
  soup = Times @@ PD[K] /. x : X[i_, j_, k_, l_] :> If[PositiveQ[x],
      a[j, i] a[k, -j] a[-l, -k] a[-i, l],
      a[-j, i] a[k, j] a[l, -k] a[-i, -l] ];
  cs = soup //. a[i_, x___, j_] a[j_, y___, k_] :> a[i, x, j, y, k];
  A = Table[0, Length@cs, Length@cs];

  Times @@ PD[K] /. x : X[i_, j_, k_, l_] :> (

    aps = If[PositiveQ[x], {j, k, -l, -i}, {-j, k, l, -i}];
    is = Position[cs, #][[1, 1]] & /@ aps;
    A[[is, is]] += If[PositiveQ[x],

      {{{0, t*, 0, -t*}, {t, -r, -t*, 2 t*}, {0, -t, 0, t}, {-t, 2 t, t*, -r}},
       {{r, -t, -2 t*, t*}, {-t*, 0, t*, 0}, {-2 t, t, r, -t*}, {t, 0, -t, 0}}}

    ]);

  MatrixSignature[A]
];
```