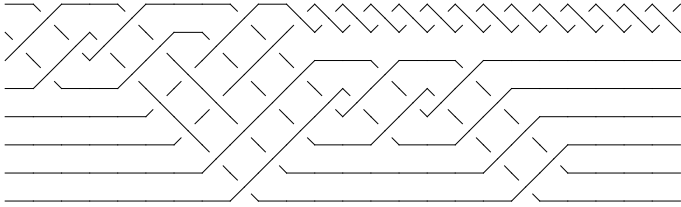


`BraidPlot[CollapseBraid@(b = Double@BR[Knot["8_15"]])]`

KnotTheory::credits: The minimum braids representing the knots with ...by Thomas Gittings. See arXiv:math.GT/0401051.



`Timing[Homf[b, 7]]`

Homf at BR[8, {-2, -3, -1, -2, -2, -3, -1, -2, 4, 3, 5, 4, -2, -3, -1, -2, -6, -7, -5, -6, -4, -5, -3, -4, -4, -5, -3, -4, -4, -5, -3, -4, -6, -7, -5, -6, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1}], 7

Computed hm, time is 21.154

Computed out, time is 95.785

$$\left\{ 95.785, \right. \\ \left\{ \frac{1}{v^7 z} - \frac{9}{v^5 z} + \frac{30}{v^3 z} - \frac{44}{v z} + \frac{23 v}{z} + \frac{5 v^3}{z} - \frac{5 v^5}{z} - \frac{v^7}{z} + \frac{36 z}{v^7} - \frac{266 z}{v^5} + \frac{742 z}{v^3} - \frac{948 z}{v} + 500 v z - 16 v^3 z - \right. \\ 34 v^5 z - 14 v^7 z + \frac{210 z^3}{v^7} - \frac{1529 z^3}{v^5} + \frac{4240 z^3}{v^3} - \frac{5373 z^3}{v} + 2826 v z^3 - 219 v^3 z^3 - 100 v^5 z^3 - 55 v^7 z^3 + \\ \frac{462 z^5}{v^7} - \frac{3738 z^5}{v^5} + \frac{10907 z^5}{v^3} - \frac{14156 z^5}{v} + 7435 v z^5 - 634 v^3 z^5 - 179 v^5 z^5 - 97 v^7 z^5 + \frac{495 z^7}{v^7} - \\ \frac{4803 z^7}{v^5} + \frac{15405 z^7}{v^3} - \frac{20902 z^7}{v} + 11014 v z^7 - 905 v^3 z^7 - 215 v^5 z^7 - 89 v^7 z^7 + \frac{286 z^9}{v^7} - \frac{3534 z^9}{v^5} + \\ \frac{12993 z^9}{v^3} - \frac{18773 z^9}{v} + 9979 v z^9 - 746 v^3 z^9 - 160 v^5 z^9 - 45 v^7 z^9 + \frac{91 z^{11}}{v^7} - \frac{1536 z^{11}}{v^5} + \frac{6772 z^{11}}{v^3} - \\ \frac{10604 z^{11}}{v} + 5720 v z^{11} - 367 v^3 z^{11} - 65 v^5 z^{11} - 11 v^7 z^{11} + \frac{15 z^{13}}{v^7} - \frac{389 z^{13}}{v^5} + \frac{2187 z^{13}}{v^3} - \\ \frac{3770 z^{13}}{v} + 2076 v z^{13} - 105 v^3 z^{13} - 13 v^5 z^{13} - v^7 z^{13} + \frac{z^{15}}{v^7} - \frac{53 z^{15}}{v^5} + \frac{424 z^{15}}{v^3} - \frac{816 z^{15}}{v} + \\ \left. \left. 461 v z^{15} - 16 v^3 z^{15} - v^5 z^{15} - \frac{3 z^{17}}{v^5} + \frac{45 z^{17}}{v^3} - \frac{98 z^{17}}{v} + 57 v z^{17} - v^3 z^{17} + \frac{2 z^{19}}{v^3} - \frac{5 z^{19}}{v} + 3 v z^{19} \right\} \right\}$$

`Timing[Homf[b, 7]]`

Homf at BR[8, {-2, -3, -1, -2, -2, -3, -1, -2, 4, 3, 5, 4, -2, -3, -1, -2, -6, -7, -5, -6, -4, -5, -3, -4, -4, -5, -3, -4, -4, -5, -3, -4, -6, -7, -5, -6, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1}], 7

Computed hm, time is 17.644

Computed out, time is 29.531

$$\left\{ 29.531, \right. \\ \left. \left\{ \frac{1}{v^7 z} - \frac{9}{v^5 z} + \frac{30}{v^3 z} - \frac{44}{v z} + \frac{23 v}{z} + \frac{5 v^3}{z} - \frac{5 v^5}{z} - \frac{v^7}{z} + \frac{36 z}{v^7} - \frac{266 z}{v^5} + \frac{742 z}{v^3} - \frac{948 z}{v} + 500 v z - 16 v^3 z - \right. \right. \\ \left. \left. 34 v^5 z - 14 v^7 z + \frac{210 z^3}{v^7} - \frac{1529 z^3}{v^5} + \frac{4240 z^3}{v^3} - \frac{5373 z^3}{v} + 2826 v z^3 - 219 v^3 z^3 - 100 v^5 z^3 - 55 v^7 z^3 + \right. \right. \\ \left. \left. \frac{462 z^5}{v^7} - \frac{3738 z^5}{v^5} + \frac{10907 z^5}{v^3} - \frac{14156 z^5}{v} + 7435 v z^5 - 634 v^3 z^5 - 179 v^5 z^5 - 97 v^7 z^5 + \frac{495 z^7}{v^7} - \right. \right. \\ \left. \left. \frac{4803 z^7}{v^5} + \frac{15405 z^7}{v^3} - \frac{20902 z^7}{v} + 11014 v z^7 - 905 v^3 z^7 - 215 v^5 z^7 - 89 v^7 z^7 + \frac{286 z^9}{v^7} - \frac{3534 z^9}{v^5} + \right. \right. \\ \left. \left. \frac{12993 z^9}{v^3} - \frac{18773 z^9}{v} + 9979 v z^9 - 746 v^3 z^9 - 160 v^5 z^9 - 45 v^7 z^9 + \frac{91 z^{11}}{v^7} - \frac{1536 z^{11}}{v^5} + \frac{6772 z^{11}}{v^3} - \right. \right. \\ \left. \left. \frac{10604 z^{11}}{v} + 5720 v z^{11} - 367 v^3 z^{11} - 65 v^5 z^{11} - 11 v^7 z^{11} + \frac{15 z^{13}}{v^7} - \frac{389 z^{13}}{v^5} + \frac{2187 z^{13}}{v^3} - \right. \right. \\ \left. \left. \frac{3770 z^{13}}{v} + 2076 v z^{13} - 105 v^3 z^{13} - 13 v^5 z^{13} - v^7 z^{13} + \frac{z^{15}}{v^7} - \frac{53 z^{15}}{v^5} + \frac{424 z^{15}}{v^3} - \frac{816 z^{15}}{v} + \right. \right. \\ \left. \left. 461 v z^{15} - 16 v^3 z^{15} - v^5 z^{15} - \frac{3 z^{17}}{v^5} + \frac{45 z^{17}}{v^3} - \frac{98 z^{17}}{v} + 57 v z^{17} - v^3 z^{17} + \frac{2 z^{19}}{v^3} - \frac{5 z^{19}}{v} + 3 v z^{19} \right\} \right\}$$

Old Stuff :

```
Homf[BR[n_, l_], k_] := Expand[Normal[Print["Homf at ", BR[n, l], ", ", k];
  Fold[Map[Expand, Dot[#1, HeckeMatrix[n, #2]], {1}] &,
  SparseArray[{{1} -> 1}, {n!}], 1].ClosureMatrix[n, 1].ClosureMatrix[n-1, k-1]
]] /. d -> (1/v - v)/z // Expand;
Homf[b_BR] := Homf[b, First@b-1];
```