

```
SetDirectory["C:\\drorbn\\AcademicPensieve\\Projects\\FreeLie"];
<< FreeLie.m
```

Warning: May not work with the current version of FreeLie.m, or may produce completely different timing results.

BCHBase [7]

$$\begin{aligned} & \frac{\langle xxxxxxxy \rangle}{30\,240} - \frac{\langle xxxxxxxyy \rangle}{5040} + \frac{\langle xxxxyxy \rangle}{10\,080} + \frac{\langle xxxxyyyy \rangle}{3780} + \frac{\langle xxxyxxy \rangle}{10\,080} + \frac{\langle xxxyxxyy \rangle}{1680} + \\ & \frac{\langle xxxxyxyy \rangle}{1260} + \frac{\langle xxxxyyyy \rangle}{3780} + \frac{\langle xxyxxyy \rangle}{2016} - \frac{\langle xxyxyxy \rangle}{5040} + \frac{13 \langle xxyxyyy \rangle}{15\,120} + \frac{\langle xxyxyyy \rangle}{10\,080} - \\ & \frac{\langle xxyyyyxy \rangle}{1512} - \frac{\langle xxyyyyyy \rangle}{5040} + \frac{\langle xyxyxyy \rangle}{1260} - \frac{\langle xyxyyyy \rangle}{2016} - \frac{\langle xyxyyyy \rangle}{5040} + \frac{\langle xyyyyyyy \rangle}{30\,240} \end{aligned}$$

BCHBase [8]

$$\begin{aligned} & \frac{\langle xxxxxxxyy \rangle}{60\,480} - \frac{\langle xxxxxxxyxy \rangle}{15\,120} - \frac{\langle xxxxxxxyyy \rangle}{10\,080} + \frac{\langle xxxxyxxy \rangle}{20\,160} - \frac{\langle xxxxyxyy \rangle}{20\,160} + \frac{\langle xxxxyyxy \rangle}{2520} + \\ & \frac{23 \langle xxxxyyyy \rangle}{120\,960} + \frac{\langle xxxyxxyy \rangle}{4032} - \frac{\langle xxxxyxyxy \rangle}{10\,080} + \frac{13 \langle xxxxyxyyy \rangle}{30\,240} + \frac{\langle xxxxyyxyy \rangle}{20\,160} - \\ & \frac{\langle xxxxyyyxy \rangle}{3024} - \frac{\langle xxxxyyyyyy \rangle}{10\,080} + \frac{\langle xxyxyxyy \rangle}{2520} - \frac{\langle xxyxyyyy \rangle}{4032} - \frac{\langle xxyxyxyyy \rangle}{10\,080} + \frac{\langle xxyyyyyyy \rangle}{60\,480} \end{aligned}$$

Do[

```
BCHBase[n];
```

```
Print[n → {Share[], TimeUsed[], MemoryInUse[], Length[BCHBase[n]]},
```

```
{n, 22}
```

```
]
```

1 → {1 609 320, 0.499, 21 754 312, 2}
2 → {0, 0.639, 21 754 288, 2}
3 → {0, 0.811, 21 754 288, 2}
4 → {18 446 744 073 709 551 584, 0.92, 21 754 368, 2}
5 → {0, 1.045, 21 754 320, 6}
6 → {0, 1.154, 21 754 320, 5}
7 → {0, 1.279, 21 754 320, 18}
8 → {0, 1.388, 21 754 432, 17}
9 → {171 848, 1.544, 22 091 944, 55}
10 → {353 704, 1.778, 22 734 952, 55}
11 → {772 864, 2.137, 23 808 264, 186}
12 → {1 457 880, 2.792, 26 112 784, 185}
13 → {3 066 760, 4.071, 30 291 528, 630}
14 → {6 622 648, 6.833, 38 547 008, 629}
15 → {14 243 696, 12.714, 54 250 880, 2181}
16 → {29 511 592, 25.631, 85 706 176, 2181}
17 → {59 455 192, 54.959, 149 177 152, 7710}
18 → {122 796 352, 123.178, 281 368 368, 7709}
19 → {272 026 040, 278.025, 511 593 536, 27 594}
20 → {531 641 128, 633.239, 1 013 539 120, 27 593}
21 → {1 061 587 008, 1448.34, 1 997 793 224, 99 857}