

There is an involution on NCSym which I will refer to as omega2.

$$\text{omega2}(P[A]) = (-1)^{(|A| - \ell(A))} P[A]$$

This is likely to be the analogue of the involution omega on Sym (see Rosas/Sagan)

On Sym - omega and the antipode are very related so I compute here also

antipode(omega2(*)) in hopes of seeing a pattern

Note: we know the action of omega2 on the P-basis and we do not know the action of the antipode on any basis

[- Data of omega2 on X-basis

```
> for i from 1 to 6 do
  print(Omega(X[{{seq(j,j=1..i)}}]) = ToX(ToM(omega2(X[
  {{seq(j,j=1..i)}})))));
od;
```

$$\Omega(X_{\{\{1\}\}}) = X_{\{\{1\}\}}$$

$$\Omega(X_{\{\{1, 2\}\}}) = -X_{\{\{1, 2\}\}} - 2X_{\{\{2\}, \{1\}\}}$$

$$\Omega(X_{\{\{1, 2, 3\}\}}) = X_{\{\{1, 2, 3\}\}} + 2X_{\{\{2\}, \{1, 3\}\}} + 2X_{\{\{1\}, \{2, 3\}\}} + 2X_{\{\{1, 2\}, \{3\}\}} + 6X_{\{\{3\}, \{2\}, \{1\}\}}$$

$$\begin{aligned} \Omega(X_{\{\{1, 2, 3, 4\}\}}) = & -6X_{\{\{2\}, \{1, 3\}, \{4\}\}} - 2X_{\{\{3\}, \{1, 2, 4\}\}} - 6X_{\{\{2\}, \{1\}, \{3, 4\}\}} \\ & - 26X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} - 2X_{\{\{1, 2\}, \{3, 4\}\}} - 6X_{\{\{3\}, \{1\}, \{2, 4\}\}} - 2X_{\{\{1, 3\}, \{2, 4\}\}} \\ & - 2X_{\{\{1, 2, 3\}, \{4\}\}} - 6X_{\{\{3\}, \{2\}, \{1, 4\}\}} - 2X_{\{\{2, 3\}, \{1, 4\}\}} - 2X_{\{\{1\}, \{2, 3, 4\}\}} - 2X_{\{\{2\}, \{1, 3, 4\}\}} \\ & - X_{\{\{1, 2, 3, 4\}\}} - 6X_{\{\{1\}, \{2, 3\}, \{4\}\}} - 6X_{\{\{1, 2\}, \{3\}, \{4\}\}} \end{aligned}$$

$$\begin{aligned} \Omega(X_{\{\{1, 2, 3, 4, 5\}\}}) = & 6X_{\{\{2\}, \{4\}, \{1, 3, 5\}\}} + 26X_{\{\{2\}, \{1, 3\}, \{4\}, \{5\}\}} + 26X_{\{\{2\}, \{1\}, \{4\}, \{3, 5\}\}} \\ & + 6X_{\{\{3\}, \{1\}, \{2, 4, 5\}\}} + 2X_{\{\{2, 4\}, \{1, 3, 5\}\}} + 6X_{\{\{3\}, \{1, 2, 4\}, \{5\}\}} + 2X_{\{\{3, 4\}, \{1, 2, 5\}\}} \\ & + 6X_{\{\{2, 3\}, \{4\}, \{1, 5\}\}} + 26X_{\{\{2\}, \{1\}, \{3, 4\}, \{5\}\}} + 6X_{\{\{1, 2\}, \{4\}, \{3, 5\}\}} \\ & + 26X_{\{\{3\}, \{2\}, \{1\}, \{4, 5\}\}} + 26X_{\{\{3\}, \{2\}, \{4\}, \{1, 5\}\}} + 2X_{\{\{1, 3\}, \{2, 4, 5\}\}} \\ & + 6X_{\{\{1, 2\}, \{3, 4\}, \{5\}\}} + 2X_{\{\{1, 2, 4\}, \{3, 5\}\}} + 2X_{\{\{1, 2, 3, 4\}, \{5\}\}} + 6X_{\{\{1, 2\}, \{3\}, \{4, 5\}\}} \\ & + 6X_{\{\{2\}, \{3, 4\}, \{1, 5\}\}} + 6X_{\{\{1\}, \{2, 4\}, \{3, 5\}\}} + 2X_{\{\{1, 2, 3\}, \{4, 5\}\}} + 26X_{\{\{3\}, \{1\}, \{2, 4\}, \{5\}\}} \\ & + 6X_{\{\{2\}, \{1, 4\}, \{3, 5\}\}} + 2X_{\{\{1, 4\}, \{2, 3, 5\}\}} + 6X_{\{\{3\}, \{2\}, \{1, 4, 5\}\}} + X_{\{\{1, 2, 3, 4, 5\}\}} \\ & + 6X_{\{\{1, 3\}, \{2, 4\}, \{5\}\}} + 6X_{\{\{3\}, \{2, 4\}, \{1, 5\}\}} + 6X_{\{\{1\}, \{2, 3\}, \{4, 5\}\}} + 2X_{\{\{4\}, \{1, 2, 3, 5\}\}} \\ & + 26X_{\{\{1\}, \{2, 3\}, \{4\}, \{5\}\}} + 26X_{\{\{3\}, \{2\}, \{1, 4\}, \{5\}\}} + 6X_{\{\{2\}, \{1, 3\}, \{4, 5\}\}} \\ & + 26X_{\{\{3\}, \{1\}, \{4\}, \{2, 5\}\}} + 6X_{\{\{2, 3\}, \{1, 4\}, \{5\}\}} + 150X_{\{\{3\}, \{2\}, \{1\}, \{4\}, \{5\}\}} \\ & + 2X_{\{\{2, 3, 4\}, \{1, 5\}\}} + 6X_{\{\{1, 3\}, \{4\}, \{2, 5\}\}} + 2X_{\{\{2, 3\}, \{1, 4, 5\}\}} + 6X_{\{\{1\}, \{2, 3, 4\}, \{5\}\}} \\ & + 6X_{\{\{1\}, \{3, 4\}, \{2, 5\}\}} + 6X_{\{\{2\}, \{1, 3, 4\}, \{5\}\}} + 2X_{\{\{3\}, \{1, 2, 4, 5\}\}} + 26X_{\{\{1, 2\}, \{3\}, \{4\}, \{5\}\}} \\ & + 6X_{\{\{3\}, \{1, 4\}, \{2, 5\}\}} + 6X_{\{\{3\}, \{4\}, \{1, 2, 5\}\}} + 2X_{\{\{2\}, \{1, 3, 4, 5\}\}} + 6X_{\{\{2\}, \{1\}, \{3, 4, 5\}\}} \\ & + 6X_{\{\{1, 2, 3\}, \{4\}, \{5\}\}} + 6X_{\{\{1\}, \{4\}, \{2, 3, 5\}\}} + 2X_{\{\{1, 3, 4\}, \{2, 5\}\}} + 2X_{\{\{1\}, \{2, 3, 4, 5\}\}} \\ & + 2X_{\{\{1, 2\}, \{3, 4, 5\}\}} \end{aligned}$$

$$\begin{aligned} \Omega(X_{\{\{1, 2, 3, 4, 5, 6\}\}}) = & -6X_{\{\{1, 4\}, \{6\}, \{2, 3, 5\}\}} - 26X_{\{\{3\}, \{4\}, \{6\}, \{1, 2, 5\}\}} \\ & - 26X_{\{\{3\}, \{1\}, \{4, 6\}, \{2, 5\}\}} - 2X_{\{\{2, 3\}, \{1, 4, 5, 6\}\}} - 6X_{\{\{4\}, \{1, 2, 3, 6\}, \{5\}\}} \\ & - 6X_{\{\{2\}, \{3, 4, 6\}, \{1, 5\}\}} - 26X_{\{\{1, 2\}, \{3\}, \{6\}, \{4, 5\}\}} - 26X_{\{\{3\}, \{1, 4\}, \{6\}, \{2, 5\}\}} \end{aligned}$$

$$\begin{aligned}
& -6 X_{\{\{1, 2, 3, 4\}, \{6\}, \{5\}\}} - 26 X_{\{\{3\}, \{1\}, \{4\}, \{2, 5, 6\}\}} - 2 X_{\{\{1, 2, 3, 4\}, \{5, 6\}\}} \\
& - 150 X_{\{\{3\}, \{2\}, \{4\}, \{1, 6\}, \{5\}\}} - 6 X_{\{\{2, 3, 4\}, \{1, 6\}, \{5\}\}} - 26 X_{\{\{1\}, \{2, 4\}, \{3, 6\}, \{5\}\}} \\
& - 6 X_{\{\{2\}, \{1, 6\}, \{3, 4, 5\}\}} - 26 X_{\{\{1, 3\}, \{2, 4\}, \{6\}, \{5\}\}} - 2 X_{\{\{2, 3, 6\}, \{1, 4, 5\}\}} \\
& - 26 X_{\{\{1\}, \{2, 3\}, \{4, 6\}, \{5\}\}} - 26 X_{\{\{1, 2\}, \{4\}, \{6\}, \{3, 5\}\}} - 26 X_{\{\{3\}, \{2, 4\}, \{1, 6\}, \{5\}\}} \\
& - 6 X_{\{\{1\}, \{2, 3\}, \{4, 5, 6\}\}} - 2 X_{\{\{1, 3, 4\}, \{2, 5, 6\}\}} - X_{\{\{1, 2, 3, 4, 5, 6\}\}} - 6 X_{\{\{3\}, \{2, 6\}, \{1, 4, 5\}\}} \\
& - 6 X_{\{\{1, 2\}, \{4, 6\}, \{3, 5\}\}} - 26 X_{\{\{1\}, \{2, 3\}, \{6\}, \{4, 5\}\}} - 6 X_{\{\{1\}, \{6\}, \{2, 3, 4, 5\}\}} \\
& - 6 X_{\{\{2\}, \{1\}, \{3, 4, 5, 6\}\}} - 6 X_{\{\{4\}, \{6\}, \{1, 2, 3, 5\}\}} - 2 X_{\{\{3, 4\}, \{1, 2, 5, 6\}\}} \\
& - 2 X_{\{\{1, 2, 3, 6\}, \{4, 5\}\}} - 26 X_{\{\{3\}, \{1\}, \{2, 4\}, \{5, 6\}\}} - 6 X_{\{\{2\}, \{4, 6\}, \{1, 3, 5\}\}} \\
& - 6 X_{\{\{1, 4\}, \{2, 6\}, \{3, 5\}\}} - 6 X_{\{\{2\}, \{1, 3, 6\}, \{4, 5\}\}} - 26 X_{\{\{3\}, \{4\}, \{1, 2, 6\}, \{5\}\}} \\
& - 6 X_{\{\{1, 3\}, \{2, 4\}, \{5, 6\}\}} - 6 X_{\{\{1, 3\}, \{4\}, \{2, 5, 6\}\}} - 150 X_{\{\{3\}, \{2\}, \{1, 4\}, \{6\}, \{5\}\}} \\
& - 6 X_{\{\{1, 3\}, \{4, 6\}, \{2, 5\}\}} - 26 X_{\{\{2\}, \{4\}, \{1, 6\}, \{3, 5\}\}} - 2 X_{\{\{1, 2\}, \{3, 4, 5, 6\}\}} \\
& - 26 X_{\{\{2\}, \{1\}, \{6\}, \{3, 4, 5\}\}} - 26 X_{\{\{1, 2\}, \{3\}, \{4, 6\}, \{5\}\}} - 6 X_{\{\{3\}, \{2, 4, 6\}, \{1, 5\}\}} \\
& - 150 X_{\{\{3\}, \{1\}, \{4\}, \{6\}, \{2, 5\}\}} - 6 X_{\{\{1, 2, 4\}, \{6\}, \{3, 5\}\}} - 150 X_{\{\{3\}, \{1\}, \{4\}, \{2, 6\}, \{5\}\}} \\
& - 6 X_{\{\{1\}, \{2, 4, 6\}, \{3, 5\}\}} - 2 X_{\{\{1, 4\}, \{2, 3, 5, 6\}\}} - 6 X_{\{\{1, 2, 4\}, \{3, 6\}, \{5\}\}} \\
& - 6 X_{\{\{2, 3\}, \{6\}, \{1, 4, 5\}\}} - 6 X_{\{\{3\}, \{1, 4\}, \{2, 5, 6\}\}} - 26 X_{\{\{2\}, \{1\}, \{3, 4, 6\}, \{5\}\}} \\
& - 26 X_{\{\{2\}, \{4\}, \{6\}, \{1, 3, 5\}\}} - 150 X_{\{\{2\}, \{1, 3\}, \{4\}, \{6\}, \{5\}\}} - 26 X_{\{\{2\}, \{1, 3\}, \{4, 6\}, \{5\}\}} \\
& - 26 X_{\{\{3\}, \{2\}, \{4\}, \{1, 5, 6\}\}} - 26 X_{\{\{3\}, \{2\}, \{1, 4\}, \{5, 6\}\}} - 6 X_{\{\{3\}, \{1, 6\}, \{2, 4, 5\}\}} \\
& - 26 X_{\{\{2, 3\}, \{4\}, \{6\}, \{1, 5\}\}} - 2 X_{\{\{1\}, \{2, 3, 4, 5, 6\}\}} - 26 X_{\{\{2, 3\}, \{4\}, \{1, 6\}, \{5\}\}} \\
& - 6 X_{\{\{3, 4\}, \{2, 6\}, \{1, 5\}\}} - 6 X_{\{\{3\}, \{1, 2, 4, 6\}, \{5\}\}} - 6 X_{\{\{3\}, \{1, 2, 6\}, \{4, 5\}\}} \\
& - 6 X_{\{\{2\}, \{1, 3\}, \{4, 5, 6\}\}} - 2 X_{\{\{4\}, \{1, 2, 3, 5, 6\}\}} - 26 X_{\{\{2\}, \{4\}, \{1, 3, 6\}, \{5\}\}} \\
& - 26 X_{\{\{1, 3\}, \{4\}, \{2, 6\}, \{5\}\}} - 26 X_{\{\{3\}, \{2\}, \{6\}, \{1, 4, 5\}\}} - 6 X_{\{\{2, 3\}, \{1, 4\}, \{5, 6\}\}} \\
& - 6 X_{\{\{1\}, \{3, 4, 6\}, \{2, 5\}\}} - 6 X_{\{\{2, 4\}, \{1, 6\}, \{3, 5\}\}} - 6 X_{\{\{1\}, \{2, 3, 4, 6\}, \{5\}\}} \\
& - 2 X_{\{\{2, 3, 4, 6\}, \{1, 5\}\}} - 26 X_{\{\{2, 3\}, \{1, 4\}, \{6\}, \{5\}\}} - 26 X_{\{\{1\}, \{3, 4\}, \{2, 6\}, \{5\}\}} \\
& - 6 X_{\{\{4\}, \{2, 3, 6\}, \{1, 5\}\}} - 26 X_{\{\{2\}, \{1, 3\}, \{6\}, \{4, 5\}\}} - 6 X_{\{\{1\}, \{2, 3, 4\}, \{5, 6\}\}} \\
& - 6 X_{\{\{1, 2\}, \{3\}, \{4, 5, 6\}\}} - 26 X_{\{\{3\}, \{2\}, \{4, 6\}, \{1, 5\}\}} - 6 X_{\{\{1, 3\}, \{2, 4, 6\}, \{5\}\}} \\
& - 6 X_{\{\{2\}, \{4\}, \{1, 3, 5, 6\}\}} - 2 X_{\{\{1, 3, 6\}, \{2, 4, 5\}\}} - 26 X_{\{\{3\}, \{1, 2, 4\}, \{6\}, \{5\}\}} \\
& - 6 X_{\{\{3, 4\}, \{6\}, \{1, 2, 5\}\}} - 6 X_{\{\{1\}, \{3, 4\}, \{2, 5, 6\}\}} - 2 X_{\{\{1, 2, 4\}, \{3, 5, 6\}\}} \\
& - 6 X_{\{\{2, 3, 4\}, \{6\}, \{1, 5\}\}} - 6 X_{\{\{2, 3\}, \{4\}, \{1, 5, 6\}\}} - 26 X_{\{\{1\}, \{2, 4\}, \{6\}, \{3, 5\}\}} \\
& - 26 X_{\{\{3\}, \{1, 4\}, \{2, 6\}, \{5\}\}} - 6 X_{\{\{3\}, \{2\}, \{1, 4, 5, 6\}\}} - 2 X_{\{\{1, 6\}, \{2, 3, 4, 5\}\}} \\
& - 26 X_{\{\{3\}, \{2\}, \{1, 6\}, \{4, 5\}\}} - 2 X_{\{\{2, 4, 6\}, \{1, 3, 5\}\}} - 26 X_{\{\{3\}, \{1\}, \{2, 6\}, \{4, 5\}\}} \\
& - 26 X_{\{\{2\}, \{3, 4\}, \{6\}, \{1, 5\}\}} - 26 X_{\{\{2\}, \{3, 4\}, \{1, 6\}, \{5\}\}} - 6 X_{\{\{3\}, \{4, 6\}, \{1, 2, 5\}\}} \\
& - 6 X_{\{\{3\}, \{1\}, \{2, 4, 5, 6\}\}} - 26 X_{\{\{3\}, \{4\}, \{1, 6\}, \{2, 5\}\}} - 26 X_{\{\{1, 3\}, \{4\}, \{6\}, \{2, 5\}\}} \\
& - 6 X_{\{\{2, 4\}, \{6\}, \{1, 3, 5\}\}} - 26 X_{\{\{1\}, \{4\}, \{6\}, \{2, 3, 5\}\}} - 6 X_{\{\{2\}, \{1, 3, 4\}, \{5, 6\}\}} \\
& - 6 X_{\{\{1, 3, 4\}, \{6\}, \{2, 5\}\}} - 6 X_{\{\{1, 3, 4\}, \{2, 6\}, \{5\}\}} - 26 X_{\{\{1\}, \{2, 3, 4\}, \{6\}, \{5\}\}} \\
& - 2 X_{\{\{4, 6\}, \{1, 2, 3, 5\}\}} - 2 X_{\{\{3\}, \{1, 2, 4, 5, 6\}\}} - 6 X_{\{\{3, 4\}, \{1, 2, 6\}, \{5\}\}} \\
& - 6 X_{\{\{2, 4\}, \{1, 3, 6\}, \{5\}\}} - 2 X_{\{\{2, 3, 4\}, \{1, 5, 6\}\}} - 6 X_{\{\{1\}, \{2, 4\}, \{3, 5, 6\}\}} \\
& - 6 X_{\{\{3\}, \{4\}, \{1, 2, 5, 6\}\}} - 150 X_{\{\{2\}, \{1\}, \{3, 4\}, \{6\}, \{5\}\}} - 2 X_{\{\{3, 4, 6\}, \{1, 2, 5\}\}} \\
& - 6 X_{\{\{2, 3\}, \{4, 6\}, \{1, 5\}\}} - 26 X_{\{\{1\}, \{4\}, \{2, 6\}, \{3, 5\}\}} - 6 X_{\{\{1, 2\}, \{6\}, \{3, 4, 5\}\}} \\
& - 2 X_{\{\{2\}, \{1, 3, 4, 5, 6\}\}} - 150 X_{\{\{1\}, \{2, 3\}, \{4\}, \{6\}, \{5\}\}} - 2 X_{\{\{2, 6\}, \{1, 3, 4, 5\}\}} \\
& - 6 X_{\{\{3, 4\}, \{1, 6\}, \{2, 5\}\}} - 6 X_{\{\{2\}, \{3, 4\}, \{1, 5, 6\}\}} - 6 X_{\{\{1, 2, 3\}, \{6\}, \{4, 5\}\}} \\
& - 26 X_{\{\{2\}, \{1, 4\}, \{6\}, \{3, 5\}\}} - 26 X_{\{\{1, 2\}, \{4\}, \{3, 6\}, \{5\}\}} - 6 X_{\{\{2\}, \{6\}, \{1, 3, 4, 5\}\}} \\
& - 2 X_{\{\{1, 2, 6\}, \{3, 4, 5\}\}} - 26 X_{\{\{1\}, \{4\}, \{2, 3, 6\}, \{5\}\}} - 6 X_{\{\{1, 3\}, \{6\}, \{2, 4, 5\}\}} \\
& - 2 X_{\{\{2, 4\}, \{1, 3, 5, 6\}\}} - 26 X_{\{\{1\}, \{3, 4\}, \{6\}, \{2, 5\}\}} - 150 X_{\{\{3\}, \{2\}, \{1\}, \{4, 6\}, \{5\}\}} \\
& - 6 X_{\{\{1, 2, 3\}, \{4, 6\}, \{5\}\}} - 26 X_{\{\{3\}, \{2, 4\}, \{6\}, \{1, 5\}\}} - 26 X_{\{\{3\}, \{4\}, \{2, 6\}, \{1, 5\}\}}
\end{aligned}$$

$-26 X_{\{\{2\}, \{1, 3, 4\}, \{6\}, \{5\}\}} - 26 X_{\{\{2\}, \{1, 4\}, \{3, 6\}, \{5\}\}} - 6 X_{\{\{2\}, \{1, 4\}, \{3, 5, 6\}\}}$
 $- 2 X_{\{\{1, 2, 3\}, \{4, 5, 6\}\}} - 26 X_{\{\{3\}, \{2\}, \{1, 4, 6\}, \{5\}\}} - 6 X_{\{\{1, 2\}, \{3, 4, 6\}, \{5\}\}}$
 $- 150 X_{\{\{3\}, \{2\}, \{1\}, \{6\}, \{4, 5\}\}} - 1082 X_{\{\{3\}, \{2\}, \{1\}, \{4\}, \{6\}, \{5\}\}} - 26 X_{\{\{1, 2\}, \{3, 4\}, \{6\}, \{5\}\}}$
 $- 6 X_{\{\{1\}, \{2, 3, 6\}, \{4, 5\}\}} - 26 X_{\{\{2\}, \{1\}, \{4, 6\}, \{3, 5\}\}} - 150 X_{\{\{2\}, \{1\}, \{4\}, \{6\}, \{3, 5\}\}}$
 $- 2 X_{\{\{6\}, \{1, 2, 3, 4, 5\}\}} - 26 X_{\{\{2\}, \{1\}, \{4\}, \{3, 5, 6\}\}} - 6 X_{\{\{3\}, \{6\}, \{1, 2, 4, 5\}\}}$
 $- 26 X_{\{\{2\}, \{4\}, \{3, 6\}, \{1, 5\}\}} - 6 X_{\{\{1\}, \{4, 6\}, \{2, 3, 5\}\}} - 6 X_{\{\{4\}, \{2, 6\}, \{1, 3, 5\}\}}$
 $- 6 X_{\{\{1, 4\}, \{2, 3, 6\}, \{5\}\}} - 6 X_{\{\{4\}, \{1, 6\}, \{2, 3, 5\}\}} - 2 X_{\{\{1, 3\}, \{2, 4, 5, 6\}\}}$
 $- 26 X_{\{\{3\}, \{2\}, \{1\}, \{4, 5, 6\}\}} - 150 X_{\{\{1, 2\}, \{3\}, \{4\}, \{6\}, \{5\}\}} - 6 X_{\{\{1, 2\}, \{4\}, \{3, 5, 6\}\}}$
 $- 2 X_{\{\{1, 2, 3, 4, 6\}, \{5\}\}} - 6 X_{\{\{2, 3\}, \{1, 4, 6\}, \{5\}\}} - 6 X_{\{\{3\}, \{1, 4, 6\}, \{2, 5\}\}}$
 $- 6 X_{\{\{4\}, \{1, 2, 6\}, \{3, 5\}\}} - 2 X_{\{\{1, 4, 6\}, \{2, 3, 5\}\}} - 6 X_{\{\{1, 3\}, \{2, 6\}, \{4, 5\}\}}$
 $- 26 X_{\{\{3\}, \{1\}, \{6\}, \{2, 4, 5\}\}} - 6 X_{\{\{2\}, \{1, 3, 4, 6\}, \{5\}\}} - 6 X_{\{\{1\}, \{4\}, \{2, 3, 5, 6\}\}}$
 $- 6 X_{\{\{3\}, \{2, 4\}, \{1, 5, 6\}\}} - 26 X_{\{\{2\}, \{1\}, \{3, 6\}, \{4, 5\}\}} - 150 X_{\{\{2\}, \{1\}, \{4\}, \{3, 6\}, \{5\}\}}$
 $- 26 X_{\{\{1, 2, 3\}, \{4\}, \{6\}, \{5\}\}} - 26 X_{\{\{3\}, \{1\}, \{2, 4, 6\}, \{5\}\}} - 6 X_{\{\{2, 4\}, \{3, 6\}, \{1, 5\}\}}$
 $- 6 X_{\{\{4\}, \{3, 6\}, \{1, 2, 5\}\}} - 2 X_{\{\{1, 3, 4, 6\}, \{2, 5\}\}} - 26 X_{\{\{2\}, \{1\}, \{3, 4\}, \{5, 6\}\}}$
 $- 2 X_{\{\{1, 2, 4, 6\}, \{3, 5\}\}} - 6 X_{\{\{1, 2, 3\}, \{4\}, \{5, 6\}\}} - 6 X_{\{\{1\}, \{2, 6\}, \{3, 4, 5\}\}}$
 $- 6 X_{\{\{2\}, \{1, 4, 6\}, \{3, 5\}\}} - 26 X_{\{\{1\}, \{4\}, \{3, 6\}, \{2, 5\}\}} - 6 X_{\{\{1\}, \{3, 6\}, \{2, 4, 5\}\}}$
 $- 26 X_{\{\{2\}, \{1, 3\}, \{4\}, \{5, 6\}\}} - 6 X_{\{\{1, 2\}, \{3, 6\}, \{4, 5\}\}} - 6 X_{\{\{1, 2\}, \{3, 4\}, \{5, 6\}\}}$
 $- 6 X_{\{\{2\}, \{3, 6\}, \{1, 4, 5\}\}} - 150 X_{\{\{3\}, \{2\}, \{1\}, \{4\}, \{5, 6\}\}} - 6 X_{\{\{1, 4\}, \{3, 6\}, \{2, 5\}\}}$
 $- 6 X_{\{\{2, 3\}, \{1, 6\}, \{4, 5\}\}} - 150 X_{\{\{3\}, \{1\}, \{2, 4\}, \{6\}, \{5\}\}} - 26 X_{\{\{1, 2\}, \{3\}, \{4\}, \{5, 6\}\}}$
 $- 6 X_{\{\{3\}, \{1, 2, 4\}, \{5, 6\}\}} - 150 X_{\{\{3\}, \{2\}, \{4\}, \{6\}, \{1, 5\}\}} - 26 X_{\{\{1\}, \{2, 3\}, \{4\}, \{5, 6\}\}}$
 $- 2 X_{\{\{3, 6\}, \{1, 2, 4, 5\}\}} - 6 X_{\{\{4\}, \{1, 3, 6\}, \{2, 5\}\}}$

```

> for i from 1 to 4 do
  for A in mylasp(i) do
    print(Omega(X[A]) = ToX(ToM(omega2(X[A]))));
  od;
od;

```

$$\Omega(X_{\{\{1\}\}}) = X_{\{\{1\}\}}$$

$$\Omega(X_{\{\{2\}, \{1\}\}}) = X_{\{\{2\}, \{1\}\}}$$

$$\Omega(X_{\{\{1, 2\}\}}) = -X_{\{\{1, 2\}\}} - 2 X_{\{\{2\}, \{1\}\}}$$

$$\Omega(X_{\{\{3\}, \{2\}, \{1\}\}}) = X_{\{\{3\}, \{2\}, \{1\}\}}$$

$$\Omega(X_{\{\{2\}, \{1, 3\}\}}) = -X_{\{\{2\}, \{1, 3\}\}} - 2 X_{\{\{3\}, \{2\}, \{1\}\}}$$

$$\Omega(X_{\{\{1\}, \{2, 3\}\}}) = -X_{\{\{1\}, \{2, 3\}\}} - 2 X_{\{\{3\}, \{2\}, \{1\}\}}$$

$$\Omega(X_{\{\{1, 2\}, \{3\}\}}) = -X_{\{\{1, 2\}, \{3\}\}} - 2 X_{\{\{3\}, \{2\}, \{1\}\}}$$

$$\Omega(X_{\{\{1, 2, 3\}\}}) = X_{\{\{1, 2, 3\}\}} + 2 X_{\{\{2\}, \{1, 3\}\}} + 2 X_{\{\{1\}, \{2, 3\}\}} + 2 X_{\{\{1, 2\}, \{3\}\}} + 6 X_{\{\{3\}, \{2\}, \{1\}\}}$$

$$\Omega(X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}}) = X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}}$$

$$\Omega(X_{\{\{3\}, \{2\}, \{1, 4\}\}}) = -2 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} - X_{\{\{3\}, \{2\}, \{1, 4\}\}}$$

$$\Omega(X_{\{\{3\}, \{1\}, \{2, 4\}\}}) = -2 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} - X_{\{\{3\}, \{1\}, \{2, 4\}\}}$$

$$\Omega(X_{\{\{2\}, \{1\}, \{3, 4\}\}}) = -X_{\{\{2\}, \{1\}, \{3, 4\}\}} - 2 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}}$$

$$\Omega(X_{\{\{2\}, \{1, 3\}, \{4\}\}}) = -X_{\{\{2\}, \{1, 3\}, \{4\}\}} - 2 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}}$$

$$\Omega(X_{\{\{1\}, \{2, 3\}, \{4\}\}}) = -2 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} - X_{\{\{1\}, \{2, 3\}, \{4\}\}}$$

$$\Omega(X_{\{\{1, 2\}, \{3\}, \{4\}\}}) = -2 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} - X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

$$\Omega(X_{\{\{2\}, \{1, 3\}, \{4\}\}}) = 2 X_{\{\{2\}, \{1, 3\}, \{4\}\}} + 2 X_{\{\{2\}, \{1\}, \{3, 4\}\}} + 6 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} + 2 X_{\{\{3\}, \{2\}, \{1, 4\}\}} + X_{\{\{2\}, \{1, 3, 4\}\}}$$

$$\Omega(X_{\{\{1\}, \{2, 3, 4\}\}}) = 2 X_{\{\{2\}, \{1\}, \{3, 4\}\}} + 6 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} + 2 X_{\{\{3\}, \{1\}, \{2, 4\}\}} + X_{\{\{1\}, \{2, 3, 4\}\}} + 2 X_{\{\{1\}, \{2, 3\}, \{4\}\}}$$

$$\Omega(X_{\{\{2, 3\}, \{1, 4\}\}}) = 4 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} + 2 X_{\{\{3\}, \{2\}, \{1, 4\}\}} + X_{\{\{2, 3\}, \{1, 4\}\}} + 2 X_{\{\{1\}, \{2, 3\}, \{4\}\}}$$

$$\Omega(X_{\{\{1, 3\}, \{2, 4\}\}}) = 2 X_{\{\{2\}, \{1, 3\}, \{4\}\}} + 4 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} + 2 X_{\{\{3\}, \{1\}, \{2, 4\}\}} + X_{\{\{1, 3\}, \{2, 4\}\}}$$

$$\Omega(X_{\{\{1, 2\}, \{3, 4\}\}}) = 2 X_{\{\{2\}, \{1\}, \{3, 4\}\}} + 4 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} + X_{\{\{1, 2\}, \{3, 4\}\}} + 2 X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

$$\Omega(X_{\{\{3\}, \{1, 2, 4\}\}}) = X_{\{\{3\}, \{1, 2, 4\}\}} + 6 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} + 2 X_{\{\{3\}, \{1\}, \{2, 4\}\}} + 2 X_{\{\{3\}, \{2\}, \{1, 4\}\}} + 2 X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

$$\Omega(X_{\{\{1, 2, 3\}, \{4\}\}}) = 2 X_{\{\{2\}, \{1, 3\}, \{4\}\}} + 6 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} + X_{\{\{1, 2, 3\}, \{4\}\}} + 2 X_{\{\{1\}, \{2, 3\}, \{4\}\}} + 2 X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

$$\Omega(X_{\{\{1, 2, 3, 4\}\}}) = -6 X_{\{\{2\}, \{1, 3\}, \{4\}\}} - 2 X_{\{\{3\}, \{1, 2, 4\}\}} - 6 X_{\{\{2\}, \{1\}, \{3, 4\}\}} - 26 X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} - 2 X_{\{\{1, 2\}, \{3, 4\}\}} - 6 X_{\{\{3\}, \{1\}, \{2, 4\}\}} - 2 X_{\{\{1, 3\}, \{2, 4\}\}} - 2 X_{\{\{1, 2, 3\}, \{4\}\}} - 6 X_{\{\{3\}, \{2\}, \{1, 4\}\}} - 2 X_{\{\{2, 3\}, \{1, 4\}\}} - 2 X_{\{\{1\}, \{2, 3, 4\}\}} - 2 X_{\{\{2\}, \{1, 3, 4\}\}} - X_{\{\{1, 2, 3, 4\}\}} - 6 X_{\{\{1\}, \{2, 3\}, \{4\}\}} - 6 X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

>

omega2 on the M-basis

```
> for i from 1 to 6 do
  print(Omega(M[{{seq(j,j=1..i)}}]) =
  ToM(omega2(M[{{seq(j,j=1..i)}}])));
od;
```

$$\Omega(M_{\{\{1\}\}}) = M_{\{\{1\}\}}$$

$$\Omega(M_{\{\{1, 2\}\}}) = -M_{\{\{1, 2\}\}}$$

$$\Omega(M_{\{\{1, 2, 3\}\}}) = M_{\{\{1, 2, 3\}\}}$$

$$\Omega(M_{\{\{1, 2, 3, 4\}\}}) = -M_{\{\{1, 2, 3, 4\}\}}$$

$$\Omega(M_{\{\{1, 2, 3, 4, 5\}\}}) = M_{\{\{1, 2, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{1, 2, 3, 4, 5, 6\}\}}) = -M_{\{\{1, 2, 3, 4, 5, 6\}\}}$$

```
> for i from 1 to 5 do
  for A in mylasp(i) do
    print(Omega(M[A]) = ToM(omega2(M[A])));
  od;
od;
```

$$\Omega(M_{\{\{1\}\}}) = M_{\{\{1\}\}}$$

$$\Omega(M_{\{\{2\}, \{1\}\}}) = M_{\{\{2\}, \{1\}\}} + 2 M_{\{\{1, 2\}\}}$$

$$\Omega(M_{\{\{1, 2\}\}}) = -M_{\{\{1, 2\}\}}$$

$$\Omega(M_{\{\{3\}, \{2\}, \{1\}\}}) = M_{\{\{3\}, \{2\}, \{1\}\}} + 2 M_{\{\{1, 2\}, \{3\}\}} + 6 M_{\{\{1, 2, 3\}\}} + 2 M_{\{\{1\}, \{2, 3\}\}} + 2 M_{\{\{2\}, \{1, 3\}\}}$$

$$\Omega(M_{\{\{2\}, \{1, 3\}\}}) = -2 M_{\{\{1, 2, 3\}\}} - M_{\{\{2\}, \{1, 3\}\}}$$

$$\Omega(M_{\{\{1\}, \{2, 3\}\}}) = -2 M_{\{\{1, 2, 3\}\}} - M_{\{\{1\}, \{2, 3\}\}}$$

$$\Omega(M_{\{\{1, 2\}, \{3\}\}}) = -M_{\{\{1, 2\}, \{3\}\}} - 2 M_{\{\{1, 2, 3\}\}}$$

$$\Omega(M_{\{\{1, 2, 3\}\}}) = M_{\{\{1, 2, 3\}\}}$$

$$\Omega(M_{\{\{3\}, \{2\}, \{1\}, \{4\}\}}) = 2 M_{\{\{2\}, \{1, 3\}, \{4\}\}} + 6 M_{\{\{3\}, \{1, 2, 4\}\}} + 2 M_{\{\{1\}, \{2, 3\}, \{4\}\}} + 2 M_{\{\{1, 2\}, \{3\}, \{4\}\}} + 6 M_{\{\{1, 2, 3\}, \{4\}\}} + M_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} + 6 M_{\{\{2\}, \{1, 3, 4\}\}} + 6 M_{\{\{1\}, \{2, 3, 4\}\}} + 4 M_{\{\{2, 3\}, \{1, 4\}\}} + 2 M_{\{\{3\}, \{2\}, \{1, 4\}\}} + 4 M_{\{\{1, 3\}, \{2, 4\}\}} + 4 M_{\{\{1, 2\}, \{3, 4\}\}} + 24 M_{\{\{1, 2, 3, 4\}\}} + 2 M_{\{\{3\}, \{1\}, \{2, 4\}\}} + 2 M_{\{\{2\}, \{1\}, \{3, 4\}\}}$$

$$\Omega(M_{\{\{3\}, \{2\}, \{1, 4\}\}}) = -2 M_{\{\{3\}, \{1, 2, 4\}\}} - 6 M_{\{\{1, 2, 3, 4\}\}} - M_{\{\{3\}, \{2\}, \{1, 4\}\}} - 2 M_{\{\{2, 3\}, \{1, 4\}\}} - 2 M_{\{\{2\}, \{1, 3, 4\}\}}$$

$$\Omega(M_{\{\{3\}, \{1\}, \{2, 4\}\}}) = -2 M_{\{\{3\}, \{1, 2, 4\}\}} - 6 M_{\{\{1, 2, 3, 4\}\}} - M_{\{\{3\}, \{1\}, \{2, 4\}\}} - 2 M_{\{\{1, 3\}, \{2, 4\}\}} - 2 M_{\{\{1\}, \{2, 3, 4\}\}}$$

$$\Omega(M_{\{\{2\}, \{1\}, \{3, 4\}\}}) = -M_{\{\{2\}, \{1\}, \{3, 4\}\}} - 2 M_{\{\{1, 2\}, \{3, 4\}\}} - 6 M_{\{\{1, 2, 3, 4\}\}} - 2 M_{\{\{1\}, \{2, 3, 4\}\}} - 2 M_{\{\{2\}, \{1, 3, 4\}\}}$$

$$\Omega(M_{\{\{2\}, \{1, 3\}, \{4\}\}}) = -2 M_{\{\{1, 2, 3\}, \{4\}\}} - 6 M_{\{\{1, 2, 3, 4\}\}} - M_{\{\{2\}, \{1, 3\}, \{4\}\}} - 2 M_{\{\{1, 3\}, \{2, 4\}\}} - 2 M_{\{\{2\}, \{1, 3, 4\}\}}$$

$$\Omega(M_{\{\{1\}, \{2, 3\}, \{4\}\}}) = -2 M_{\{\{1, 2, 3\}, \{4\}\}} - 6 M_{\{\{1, 2, 3, 4\}\}} - M_{\{\{1\}, \{2, 3\}, \{4\}\}} - 2 M_{\{\{2, 3\}, \{1, 4\}\}} - 2 M_{\{\{1\}, \{2, 3, 4\}\}}$$

$$\Omega(M_{\{\{1, 2\}, \{3\}, \{4\}\}}) = -M_{\{\{1, 2\}, \{3\}, \{4\}\}} - 2 M_{\{\{1, 2, 3\}, \{4\}\}} - 2 M_{\{\{3\}, \{1, 2, 4\}\}} - 2 M_{\{\{1, 2\}, \{3, 4\}\}} - 6 M_{\{\{1, 2, 3, 4\}\}}$$

$$\Omega(M_{\{\{2\}, \{1, 3, 4\}\}}) = 2 M_{\{\{1, 2, 3, 4\}\}} + M_{\{\{2\}, \{1, 3, 4\}\}}$$

$$\Omega(M_{\{\{1\}, \{2, 3, 4\}\}}) = 2 M_{\{\{1, 2, 3, 4\}\}} + M_{\{\{1\}, \{2, 3, 4\}\}}$$

$$\Omega(M_{\{\{2, 3\}, \{1, 4\}\}}) = 2 M_{\{\{1, 2, 3, 4\}\}} + M_{\{\{2, 3\}, \{1, 4\}\}}$$

$$\Omega(M_{\{\{1, 3\}, \{2, 4\}\}}) = 2 M_{\{\{1, 2, 3, 4\}\}} + M_{\{\{1, 3\}, \{2, 4\}\}}$$

$$\Omega(M_{\{\{1, 2\}, \{3, 4\}\}}) = M_{\{\{1, 2\}, \{3, 4\}\}} + 2 M_{\{\{1, 2, 3, 4\}\}}$$

$$\Omega(M_{\{\{3\}, \{1, 2, 4\}\}}) = M_{\{\{3\}, \{1, 2, 4\}\}} + 2 M_{\{\{1, 2, 3, 4\}\}}$$

$$\Omega(M_{\{\{1, 2, 3\}, \{4\}\}}) = M_{\{\{1, 2, 3\}, \{4\}\}} + 2 M_{\{\{1, 2, 3, 4\}\}}$$

$$\Omega(M_{\{\{1, 2, 3, 4\}\}}) = -M_{\{\{1, 2, 3, 4\}\}}$$

$$\Omega(M_{\{\{3\}, \{2\}, \{1\}, \{4\}, \{5\}\}}) = 4 M_{\{\{2, 3\}, \{1, 4\}, \{5\}\}} + 6 M_{\{\{3\}, \{2\}, \{1, 4, 5\}\}} + 4 M_{\{\{2\}, \{3, 4\}, \{1, 5\}\}}$$

$$\begin{aligned}
& + 4 M_{\{\{1, 3\}, \{2, 4\}, \{5\}\}} + 6 M_{\{\{1\}, \{2, 3, 4\}, \{5\}\}} + 4 M_{\{\{1\}, \{2, 3\}, \{4, 5\}\}} + 24 M_{\{\{1, 2, 3, 4\}, \{5\}\}} \\
& + 2 M_{\{\{3\}, \{2\}, \{1\}, \{4, 5\}\}} + 24 M_{\{\{3\}, \{1, 2, 4, 5\}\}} + 4 M_{\{\{2, 3\}, \{4\}, \{1, 5\}\}} \\
& + 4 M_{\{\{1\}, \{2, 4\}, \{3, 5\}\}} + 12 M_{\{\{2, 3, 4\}, \{1, 5\}\}} + 4 M_{\{\{1, 3\}, \{4\}, \{2, 5\}\}} + 24 M_{\{\{1\}, \{2, 3, 4, 5\}\}} \\
& + 12 M_{\{\{2, 4\}, \{1, 3, 5\}\}} + 6 M_{\{\{3\}, \{1, 2, 4\}, \{5\}\}} + 4 M_{\{\{1, 2\}, \{3, 4\}, \{5\}\}} \\
& + 2 M_{\{\{1\}, \{2, 3\}, \{4\}, \{5\}\}} + 2 M_{\{\{1, 2\}, \{3\}, \{4\}, \{5\}\}} + 12 M_{\{\{3, 4\}, \{1, 2, 5\}\}} \\
& + 4 M_{\{\{2\}, \{1, 3\}, \{4, 5\}\}} + 4 M_{\{\{3\}, \{2, 4\}, \{1, 5\}\}} + 6 M_{\{\{3\}, \{4\}, \{1, 2, 5\}\}} + 12 M_{\{\{1, 2, 3\}, \{4, 5\}\}} \\
& + 4 M_{\{\{1, 2\}, \{3\}, \{4, 5\}\}} + 6 M_{\{\{1, 2, 3\}, \{4\}, \{5\}\}} + 2 M_{\{\{2\}, \{1\}, \{3, 4\}, \{5\}\}} \\
& + 2 M_{\{\{2\}, \{1\}, \{4\}, \{3, 5\}\}} + 12 M_{\{\{1, 2, 4\}, \{3, 5\}\}} + 4 M_{\{\{1, 2\}, \{4\}, \{3, 5\}\}} \\
& + 4 M_{\{\{1\}, \{3, 4\}, \{2, 5\}\}} + 6 M_{\{\{2\}, \{4\}, \{1, 3, 5\}\}} + 6 M_{\{\{1\}, \{4\}, \{2, 3, 5\}\}} + 120 M_{\{\{1, 2, 3, 4, 5\}\}} \\
& + 2 M_{\{\{3\}, \{1\}, \{2, 4\}, \{5\}\}} + 6 M_{\{\{3\}, \{1\}, \{2, 4, 5\}\}} + 24 M_{\{\{2\}, \{1, 3, 4, 5\}\}} \\
& + 12 M_{\{\{1, 3\}, \{2, 4, 5\}\}} + 4 M_{\{\{2\}, \{1, 4\}, \{3, 5\}\}} + 2 M_{\{\{3\}, \{2\}, \{1, 4\}, \{5\}\}} \\
& + 2 M_{\{\{3\}, \{1\}, \{4\}, \{2, 5\}\}} + 2 M_{\{\{2\}, \{1, 3\}, \{4\}, \{5\}\}} + M_{\{\{3\}, \{2\}, \{1\}, \{4\}, \{5\}\}} \\
& + 12 M_{\{\{1, 2\}, \{3, 4, 5\}\}} + 12 M_{\{\{1, 4\}, \{2, 3, 5\}\}} + 2 M_{\{\{3\}, \{2\}, \{4\}, \{1, 5\}\}} + 24 M_{\{\{4\}, \{1, 2, 3, 5\}\}} \\
& + 6 M_{\{\{2\}, \{1, 3, 4\}, \{5\}\}} + 12 M_{\{\{2, 3\}, \{1, 4, 5\}\}} + 4 M_{\{\{3\}, \{1, 4\}, \{2, 5\}\}} + 6 M_{\{\{2\}, \{1\}, \{3, 4, 5\}\}} \\
& + 12 M_{\{\{1, 3, 4\}, \{2, 5\}\}}
\end{aligned}$$

$$\begin{aligned}
\Omega(M_{\{\{3\}, \{2\}, \{1\}, \{4, 5\}\}}) &= -2 M_{\{\{3\}, \{2\}, \{1, 4, 5\}\}} - 2 M_{\{\{1\}, \{2, 3\}, \{4, 5\}\}} - M_{\{\{3\}, \{2\}, \{1\}, \{4, 5\}\}} \\
& - 6 M_{\{\{3\}, \{1, 2, 4, 5\}\}} - 6 M_{\{\{1\}, \{2, 3, 4, 5\}\}} - 2 M_{\{\{2\}, \{1, 3\}, \{4, 5\}\}} - 6 M_{\{\{1, 2, 3\}, \{4, 5\}\}} \\
& - 2 M_{\{\{1, 2\}, \{3\}, \{4, 5\}\}} - 24 M_{\{\{1, 2, 3, 4, 5\}\}} - 2 M_{\{\{3\}, \{1\}, \{2, 4, 5\}\}} - 6 M_{\{\{2\}, \{1, 3, 4, 5\}\}} \\
& - 4 M_{\{\{1, 3\}, \{2, 4, 5\}\}} - 4 M_{\{\{1, 2\}, \{3, 4, 5\}\}} - 4 M_{\{\{2, 3\}, \{1, 4, 5\}\}} - 2 M_{\{\{2\}, \{1\}, \{3, 4, 5\}\}}
\end{aligned}$$

$$\begin{aligned}
\Omega(M_{\{\{3\}, \{2\}, \{4\}, \{1, 5\}\}}) &= -2 M_{\{\{3\}, \{2\}, \{1, 4, 5\}\}} - 2 M_{\{\{2\}, \{3, 4\}, \{1, 5\}\}} - 6 M_{\{\{3\}, \{1, 2, 4, 5\}\}} \\
& - 2 M_{\{\{2, 3\}, \{4\}, \{1, 5\}\}} - 6 M_{\{\{2, 3, 4\}, \{1, 5\}\}} - 4 M_{\{\{2, 4\}, \{1, 3, 5\}\}} - 4 M_{\{\{3, 4\}, \{1, 2, 5\}\}} \\
& - 2 M_{\{\{3\}, \{2, 4\}, \{1, 5\}\}} - 2 M_{\{\{3\}, \{4\}, \{1, 2, 5\}\}} - 2 M_{\{\{2\}, \{4\}, \{1, 3, 5\}\}} - 24 M_{\{\{1, 2, 3, 4, 5\}\}} \\
& - 6 M_{\{\{2\}, \{1, 3, 4, 5\}\}} - M_{\{\{3\}, \{2\}, \{4\}, \{1, 5\}\}} - 6 M_{\{\{4\}, \{1, 2, 3, 5\}\}} - 4 M_{\{\{2, 3\}, \{1, 4, 5\}\}}
\end{aligned}$$

$$\begin{aligned}
\Omega(M_{\{\{3\}, \{1\}, \{4\}, \{2, 5\}\}}) &= -6 M_{\{\{3\}, \{1, 2, 4, 5\}\}} - 2 M_{\{\{1, 3\}, \{4\}, \{2, 5\}\}} - 6 M_{\{\{1\}, \{2, 3, 4, 5\}\}} \\
& - 4 M_{\{\{3, 4\}, \{1, 2, 5\}\}} - 2 M_{\{\{3\}, \{4\}, \{1, 2, 5\}\}} - 2 M_{\{\{1\}, \{3, 4\}, \{2, 5\}\}} - 2 M_{\{\{1\}, \{4\}, \{2, 3, 5\}\}} \\
& - 24 M_{\{\{1, 2, 3, 4, 5\}\}} - 2 M_{\{\{3\}, \{1\}, \{2, 4, 5\}\}} - 4 M_{\{\{1, 3\}, \{2, 4, 5\}\}} - M_{\{\{3\}, \{1\}, \{4\}, \{2, 5\}\}} \\
& - 4 M_{\{\{1, 4\}, \{2, 3, 5\}\}} - 6 M_{\{\{4\}, \{1, 2, 3, 5\}\}} - 2 M_{\{\{3\}, \{1, 4\}, \{2, 5\}\}} - 6 M_{\{\{1, 3, 4\}, \{2, 5\}\}}
\end{aligned}$$

$$\begin{aligned}
\Omega(M_{\{\{2\}, \{1\}, \{4\}, \{3, 5\}\}}) &= -2 M_{\{\{1\}, \{2, 4\}, \{3, 5\}\}} - 6 M_{\{\{1\}, \{2, 3, 4, 5\}\}} - 4 M_{\{\{2, 4\}, \{1, 3, 5\}\}} \\
& - M_{\{\{2\}, \{1\}, \{4\}, \{3, 5\}\}} - 6 M_{\{\{1, 2, 4\}, \{3, 5\}\}} - 2 M_{\{\{1, 2\}, \{4\}, \{3, 5\}\}} - 2 M_{\{\{2\}, \{4\}, \{1, 3, 5\}\}} \\
& - 2 M_{\{\{1\}, \{4\}, \{2, 3, 5\}\}} - 24 M_{\{\{1, 2, 3, 4, 5\}\}} - 6 M_{\{\{2\}, \{1, 3, 4, 5\}\}} - 2 M_{\{\{2\}, \{1, 4\}, \{3, 5\}\}} \\
& - 4 M_{\{\{1, 2\}, \{3, 4, 5\}\}} - 4 M_{\{\{1, 4\}, \{2, 3, 5\}\}} - 6 M_{\{\{4\}, \{1, 2, 3, 5\}\}} - 2 M_{\{\{2\}, \{1\}, \{3, 4, 5\}\}}
\end{aligned}$$

$$\begin{aligned}
\Omega(M_{\{\{3\}, \{2\}, \{1, 4\}, \{5\}\}}) &= -2 M_{\{\{2, 3\}, \{1, 4\}, \{5\}\}} - 2 M_{\{\{3\}, \{2\}, \{1, 4, 5\}\}} - 6 M_{\{\{1, 2, 3, 4\}, \{5\}\}} \\
& - 6 M_{\{\{3\}, \{1, 2, 4, 5\}\}} - 2 M_{\{\{3\}, \{1, 2, 4\}, \{5\}\}} - 4 M_{\{\{1, 2, 4\}, \{3, 5\}\}} - 24 M_{\{\{1, 2, 3, 4, 5\}\}} \\
& - 6 M_{\{\{2\}, \{1, 3, 4, 5\}\}} - 2 M_{\{\{2\}, \{1, 4\}, \{3, 5\}\}} - M_{\{\{3\}, \{2\}, \{1, 4\}, \{5\}\}} - 6 M_{\{\{1, 4\}, \{2, 3, 5\}\}} \\
& - 2 M_{\{\{2\}, \{1, 3, 4\}, \{5\}\}} - 4 M_{\{\{2, 3\}, \{1, 4, 5\}\}} - 2 M_{\{\{3\}, \{1, 4\}, \{2, 5\}\}} - 4 M_{\{\{1, 3, 4\}, \{2, 5\}\}}
\end{aligned}$$

$$\begin{aligned}
\Omega(M_{\{\{3\}, \{1\}, \{2, 4\}, \{5\}\}}) &= -2 M_{\{\{1, 3\}, \{2, 4\}, \{5\}\}} - 2 M_{\{\{1\}, \{2, 3, 4\}, \{5\}\}} - 6 M_{\{\{1, 2, 3, 4\}, \{5\}\}} \\
& - 6 M_{\{\{3\}, \{1, 2, 4, 5\}\}} - 2 M_{\{\{1\}, \{2, 4\}, \{3, 5\}\}} - 4 M_{\{\{2, 3, 4\}, \{1, 5\}\}} - 6 M_{\{\{1\}, \{2, 3, 4, 5\}\}} \\
& - 6 M_{\{\{2, 4\}, \{1, 3, 5\}\}} - 2 M_{\{\{3\}, \{1, 2, 4\}, \{5\}\}} - 2 M_{\{\{3\}, \{2, 4\}, \{1, 5\}\}} - 4 M_{\{\{1, 2, 4\}, \{3, 5\}\}} \\
& - 24 M_{\{\{1, 2, 3, 4, 5\}\}} - M_{\{\{3\}, \{1\}, \{2, 4\}, \{5\}\}} - 2 M_{\{\{3\}, \{1\}, \{2, 4, 5\}\}} - 4 M_{\{\{1, 3\}, \{2, 4, 5\}\}}
\end{aligned}$$

$$\begin{aligned}
\Omega(M_{\{\{2\}, \{1\}, \{3, 4\}, \{5\}\}}) &= -2 M_{\{\{2\}, \{3, 4\}, \{1, 5\}\}} - 2 M_{\{\{1\}, \{2, 3, 4\}, \{5\}\}} - 6 M_{\{\{1, 2, 3, 4\}, \{5\}\}} \\
& - 4 M_{\{\{2, 3, 4\}, \{1, 5\}\}} - 6 M_{\{\{1\}, \{2, 3, 4, 5\}\}} - 2 M_{\{\{1, 2\}, \{3, 4\}, \{5\}\}} - 6 M_{\{\{3, 4\}, \{1, 2, 5\}\}}
\end{aligned}$$

$$- M_{\{\{2\}, \{1\}, \{3, 4\}, \{5\}\}} - 2 M_{\{\{1\}, \{3, 4\}, \{2, 5\}\}} - 24 M_{\{\{1, 2, 3, 4, 5\}\}} - 6 M_{\{\{2\}, \{1, 3, 4, 5\}\}} \\ - 4 M_{\{\{1, 2\}, \{3, 4, 5\}\}} - 2 M_{\{\{2\}, \{1, 3, 4\}, \{5\}\}} - 2 M_{\{\{2\}, \{1\}, \{3, 4, 5\}\}} - 4 M_{\{\{1, 3, 4\}, \{2, 5\}\}}$$

$$\Omega(M_{\{\{2\}, \{1, 3\}, \{4\}, \{5\}\}}) = -2 M_{\{\{1, 3\}, \{2, 4\}, \{5\}\}} - 6 M_{\{\{1, 2, 3, 4\}, \{5\}\}} - 2 M_{\{\{1, 3\}, \{4\}, \{2, 5\}\}} \\ - 4 M_{\{\{2, 4\}, \{1, 3, 5\}\}} - 2 M_{\{\{2\}, \{1, 3\}, \{4, 5\}\}} - 4 M_{\{\{1, 2, 3\}, \{4, 5\}\}} - 2 M_{\{\{1, 2, 3\}, \{4\}, \{5\}\}} \\ - 2 M_{\{\{2\}, \{4\}, \{1, 3, 5\}\}} - 24 M_{\{\{1, 2, 3, 4, 5\}\}} - 6 M_{\{\{2\}, \{1, 3, 4, 5\}\}} - 6 M_{\{\{1, 3\}, \{2, 4, 5\}\}} \\ - M_{\{\{2\}, \{1, 3\}, \{4\}, \{5\}\}} - 6 M_{\{\{4\}, \{1, 2, 3, 5\}\}} - 2 M_{\{\{2\}, \{1, 3, 4\}, \{5\}\}} - 4 M_{\{\{1, 3, 4\}, \{2, 5\}\}}$$

$$\Omega(M_{\{\{1\}, \{2, 3\}, \{4\}, \{5\}\}}) = -2 M_{\{\{2, 3\}, \{1, 4\}, \{5\}\}} - 2 M_{\{\{1\}, \{2, 3, 4\}, \{5\}\}} - 2 M_{\{\{1\}, \{2, 3\}, \{4, 5\}\}} \\ - 6 M_{\{\{1, 2, 3, 4\}, \{5\}\}} - 2 M_{\{\{2, 3\}, \{4\}, \{1, 5\}\}} - 4 M_{\{\{2, 3, 4\}, \{1, 5\}\}} - 6 M_{\{\{1\}, \{2, 3, 4, 5\}\}} \\ - M_{\{\{1\}, \{2, 3\}, \{4\}, \{5\}\}} - 4 M_{\{\{1, 2, 3\}, \{4, 5\}\}} - 2 M_{\{\{1, 2, 3\}, \{4\}, \{5\}\}} - 2 M_{\{\{1\}, \{4\}, \{2, 3, 5\}\}} \\ - 24 M_{\{\{1, 2, 3, 4, 5\}\}} - 4 M_{\{\{1, 4\}, \{2, 3, 5\}\}} - 6 M_{\{\{4\}, \{1, 2, 3, 5\}\}} - 6 M_{\{\{2, 3\}, \{1, 4, 5\}\}}$$

$$\Omega(M_{\{\{1, 2\}, \{3\}, \{4\}, \{5\}\}}) = -6 M_{\{\{1, 2, 3, 4\}, \{5\}\}} - 6 M_{\{\{3\}, \{1, 2, 4, 5\}\}} - 2 M_{\{\{3\}, \{1, 2, 4\}, \{5\}\}} \\ - 2 M_{\{\{1, 2\}, \{3, 4\}, \{5\}\}} - M_{\{\{1, 2\}, \{3\}, \{4\}, \{5\}\}} - 4 M_{\{\{3, 4\}, \{1, 2, 5\}\}} - 2 M_{\{\{3\}, \{4\}, \{1, 2, 5\}\}} \\ - 4 M_{\{\{1, 2, 3\}, \{4, 5\}\}} - 2 M_{\{\{1, 2\}, \{3\}, \{4, 5\}\}} - 2 M_{\{\{1, 2, 3\}, \{4\}, \{5\}\}} - 4 M_{\{\{1, 2, 4\}, \{3, 5\}\}} \\ - 2 M_{\{\{1, 2\}, \{4\}, \{3, 5\}\}} - 24 M_{\{\{1, 2, 3, 4, 5\}\}} - 6 M_{\{\{1, 2\}, \{3, 4, 5\}\}} - 6 M_{\{\{4\}, \{1, 2, 3, 5\}\}}$$

$$\Omega(M_{\{\{3\}, \{2\}, \{1, 4, 5\}\}}) = 6 M_{\{\{1, 2, 3, 4, 5\}\}} + 2 M_{\{\{3\}, \{1, 2, 4, 5\}\}} + M_{\{\{3\}, \{2\}, \{1, 4, 5\}\}} \\ + 2 M_{\{\{2, 3\}, \{1, 4, 5\}\}} + 2 M_{\{\{2\}, \{1, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{3\}, \{1\}, \{2, 4, 5\}\}}) = 6 M_{\{\{1, 2, 3, 4, 5\}\}} + 2 M_{\{\{3\}, \{1, 2, 4, 5\}\}} + M_{\{\{3\}, \{1\}, \{2, 4, 5\}\}} \\ + 2 M_{\{\{1, 3\}, \{2, 4, 5\}\}} + 2 M_{\{\{1\}, \{2, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{2\}, \{1\}, \{3, 4, 5\}\}}) = 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{2\}, \{1\}, \{3, 4, 5\}\}} + 2 M_{\{\{1, 2\}, \{3, 4, 5\}\}} \\ + 2 M_{\{\{1\}, \{2, 3, 4, 5\}\}} + 2 M_{\{\{2\}, \{1, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{2\}, \{1, 3\}, \{4, 5\}\}}) = 2 M_{\{\{1, 2, 3\}, \{4, 5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{2\}, \{1, 3\}, \{4, 5\}\}} \\ + 2 M_{\{\{1, 3\}, \{2, 4, 5\}\}} + 2 M_{\{\{2\}, \{1, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{1\}, \{2, 3\}, \{4, 5\}\}}) = 2 M_{\{\{1, 2, 3\}, \{4, 5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{1\}, \{2, 3\}, \{4, 5\}\}} \\ + 2 M_{\{\{2, 3\}, \{1, 4, 5\}\}} + 2 M_{\{\{1\}, \{2, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{1, 2\}, \{3\}, \{4, 5\}\}}) = M_{\{\{1, 2\}, \{3\}, \{4, 5\}\}} + 2 M_{\{\{1, 2, 3\}, \{4, 5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} \\ + 2 M_{\{\{3\}, \{1, 2, 4, 5\}\}} + 2 M_{\{\{1, 2\}, \{3, 4, 5\}\}}$$

$$\Omega(M_{\{\{2\}, \{4\}, \{1, 3, 5\}\}}) = 2 M_{\{\{4\}, \{1, 2, 3, 5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{2\}, \{4\}, \{1, 3, 5\}\}} \\ + 2 M_{\{\{2, 4\}, \{1, 3, 5\}\}} + 2 M_{\{\{2\}, \{1, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{1\}, \{4\}, \{2, 3, 5\}\}}) = 2 M_{\{\{4\}, \{1, 2, 3, 5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{1\}, \{4\}, \{2, 3, 5\}\}} \\ + 2 M_{\{\{1, 4\}, \{2, 3, 5\}\}} + 2 M_{\{\{1\}, \{2, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{3\}, \{2, 4\}, \{1, 5\}\}}) = M_{\{\{3\}, \{2, 4\}, \{1, 5\}\}} + 2 M_{\{\{2, 3, 4\}, \{1, 5\}\}} + 2 M_{\{\{2, 4\}, \{1, 3, 5\}\}} \\ + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + 2 M_{\{\{3\}, \{1, 2, 4, 5\}\}}$$

$$\Omega(M_{\{\{2\}, \{3, 4\}, \{1, 5\}\}}) = 2 M_{\{\{3, 4\}, \{1, 2, 5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{2\}, \{3, 4\}, \{1, 5\}\}} \\ + 2 M_{\{\{2, 3, 4\}, \{1, 5\}\}} + 2 M_{\{\{2\}, \{1, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{2, 3\}, \{4\}, \{1, 5\}\}}) = 2 M_{\{\{4\}, \{1, 2, 3, 5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{2, 3\}, \{4\}, \{1, 5\}\}} \\ + 2 M_{\{\{2, 3, 4\}, \{1, 5\}\}} + 2 M_{\{\{2, 3\}, \{1, 4, 5\}\}}$$

$$\Omega(M_{\{\{3\}, \{1, 4\}, \{2, 5\}\}}) = M_{\{\{3\}, \{1, 4\}, \{2, 5\}\}} + 2 M_{\{\{1, 3, 4\}, \{2, 5\}\}} + 2 M_{\{\{1, 4\}, \{2, 3, 5\}\}} \\ + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + 2 M_{\{\{3\}, \{1, 2, 4, 5\}\}}$$

$$\Omega(M_{\{\{1\}, \{3, 4\}, \{2, 5\}\}}) = 2 M_{\{\{3, 4\}, \{1, 2, 5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{1\}, \{3, 4\}, \{2, 5\}\}} \\ + 2 M_{\{\{1, 3, 4\}, \{2, 5\}\}} + 2 M_{\{\{1\}, \{2, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{1, 3\}, \{4\}, \{2, 5\}\}}) = 2 M_{\{\{4\}, \{1, 2, 3, 5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{1, 3\}, \{4\}, \{2, 5\}\}} \\ + 2 M_{\{\{1, 3, 4\}, \{2, 5\}\}} + 2 M_{\{\{1, 3\}, \{2, 4, 5\}\}}$$

$$\Omega(M_{\{\{2\}, \{1, 4\}, \{3, 5\}\}}) = 2 M_{\{\{1, 2, 4\}, \{3, 5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{2\}, \{1, 4\}, \{3, 5\}\}} \\ + 2 M_{\{\{1, 4\}, \{2, 3, 5\}\}} + 2 M_{\{\{2\}, \{1, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{1\}, \{2, 4\}, \{3, 5\}\}}) = 2 M_{\{\{1, 2, 4\}, \{3, 5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{1\}, \{2, 4\}, \{3, 5\}\}} \\ + 2 M_{\{\{2, 4\}, \{1, 3, 5\}\}} + 2 M_{\{\{1\}, \{2, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{1, 2\}, \{4\}, \{3, 5\}\}}) = M_{\{\{1, 2\}, \{4\}, \{3, 5\}\}} + 2 M_{\{\{1, 2, 4\}, \{3, 5\}\}} + 2 M_{\{\{4\}, \{1, 2, 3, 5\}\}} \\ + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + 2 M_{\{\{1, 2\}, \{3, 4, 5\}\}}$$

$$\Omega(M_{\{\{3\}, \{4\}, \{1, 2, 5\}\}}) = M_{\{\{3\}, \{4\}, \{1, 2, 5\}\}} + 2 M_{\{\{3, 4\}, \{1, 2, 5\}\}} + 2 M_{\{\{4\}, \{1, 2, 3, 5\}\}} \\ + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + 2 M_{\{\{3\}, \{1, 2, 4, 5\}\}}$$

$$\Omega(M_{\{\{2\}, \{1, 3, 4\}, \{5\}\}}) = 2 M_{\{\{1, 2, 3, 4\}, \{5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{2\}, \{1, 3, 4\}, \{5\}\}} \\ + 2 M_{\{\{1, 3, 4\}, \{2, 5\}\}} + 2 M_{\{\{2\}, \{1, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{1\}, \{2, 3, 4\}, \{5\}\}}) = 2 M_{\{\{1, 2, 3, 4\}, \{5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{1\}, \{2, 3, 4\}, \{5\}\}} \\ + 2 M_{\{\{2, 3, 4\}, \{1, 5\}\}} + 2 M_{\{\{1\}, \{2, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{2, 3\}, \{1, 4\}, \{5\}\}}) = 2 M_{\{\{1, 2, 3, 4\}, \{5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{2, 3\}, \{1, 4\}, \{5\}\}} \\ + 2 M_{\{\{1, 4\}, \{2, 3, 5\}\}} + 2 M_{\{\{2, 3\}, \{1, 4, 5\}\}}$$

$$\Omega(M_{\{\{1, 3\}, \{2, 4\}, \{5\}\}}) = 2 M_{\{\{1, 2, 3, 4\}, \{5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + M_{\{\{1, 3\}, \{2, 4\}, \{5\}\}} \\ + 2 M_{\{\{2, 4\}, \{1, 3, 5\}\}} + 2 M_{\{\{1, 3\}, \{2, 4, 5\}\}}$$

$$\Omega(M_{\{\{1, 2\}, \{3, 4\}, \{5\}\}}) = M_{\{\{1, 2\}, \{3, 4\}, \{5\}\}} + 2 M_{\{\{1, 2, 3, 4\}, \{5\}\}} + 2 M_{\{\{3, 4\}, \{1, 2, 5\}\}} \\ + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + 2 M_{\{\{1, 2\}, \{3, 4, 5\}\}}$$

$$\Omega(M_{\{\{3\}, \{1, 2, 4\}, \{5\}\}}) = M_{\{\{3\}, \{1, 2, 4\}, \{5\}\}} + 2 M_{\{\{1, 2, 3, 4\}, \{5\}\}} + 2 M_{\{\{1, 2, 4\}, \{3, 5\}\}} \\ + 6 M_{\{\{1, 2, 3, 4, 5\}\}} + 2 M_{\{\{3\}, \{1, 2, 4, 5\}\}}$$

$$\Omega(M_{\{\{1, 2, 3\}, \{4\}, \{5\}\}}) = M_{\{\{1, 2, 3\}, \{4\}, \{5\}\}} + 2 M_{\{\{1, 2, 3, 4\}, \{5\}\}} + 2 M_{\{\{4\}, \{1, 2, 3, 5\}\}} \\ + 2 M_{\{\{1, 2, 3\}, \{4, 5\}\}} + 6 M_{\{\{1, 2, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{2\}, \{1, 3, 4, 5\}\}}) = -2 M_{\{\{1, 2, 3, 4, 5\}\}} - M_{\{\{2\}, \{1, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{1\}, \{2, 3, 4, 5\}\}}) = -2 M_{\{\{1, 2, 3, 4, 5\}\}} - M_{\{\{1\}, \{2, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{2, 3\}, \{1, 4, 5\}\}}) = -2 M_{\{\{1, 2, 3, 4, 5\}\}} - M_{\{\{2, 3\}, \{1, 4, 5\}\}}$$

$$\Omega(M_{\{\{1, 3\}, \{2, 4, 5\}\}}) = -2 M_{\{\{1, 2, 3, 4, 5\}\}} - M_{\{\{1, 3\}, \{2, 4, 5\}\}}$$

$$\Omega(M_{\{\{1, 2\}, \{3, 4, 5\}\}}) = -2 M_{\{\{1, 2, 3, 4, 5\}\}} - M_{\{\{1, 2\}, \{3, 4, 5\}\}}$$

$$\Omega(M_{\{\{3\}, \{1, 2, 4, 5\}\}}) = -2 M_{\{\{1, 2, 3, 4, 5\}\}} - M_{\{\{3\}, \{1, 2, 4, 5\}\}}$$

$$\Omega(M_{\{\{1, 2, 3\}, \{4, 5\}\}}) = -M_{\{\{1, 2, 3\}, \{4, 5\}\}} - 2 M_{\{\{1, 2, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{2, 4\}, \{1, 3, 5\}\}}) = -M_{\{\{2, 4\}, \{1, 3, 5\}\}} - 2 M_{\{\{1, 2, 3, 4, 5\}\}}$$

$$\Omega(M_{\{\{1, 4\}, \{2, 3, 5\}\}}) = -M_{\{\{1, 4\}, \{2, 3, 5\}\}} - 2 M_{\{\{1, 2, 3, 4, 5\}\}}$$

$$\begin{aligned}
\Omega(M_{\{\{2, 3, 4\}, \{1, 5\}\}}) &= -M_{\{\{2, 3, 4\}, \{1, 5\}\}} - 2 M_{\{\{1, 2, 3, 4, 5\}\}} \\
\Omega(M_{\{\{1, 3, 4\}, \{2, 5\}\}}) &= -M_{\{\{1, 3, 4\}, \{2, 5\}\}} - 2 M_{\{\{1, 2, 3, 4, 5\}\}} \\
\Omega(M_{\{\{4\}, \{1, 2, 3, 5\}\}}) &= -M_{\{\{4\}, \{1, 2, 3, 5\}\}} - 2 M_{\{\{1, 2, 3, 4, 5\}\}} \\
\Omega(M_{\{\{1, 2, 4\}, \{3, 5\}\}}) &= -M_{\{\{1, 2, 4\}, \{3, 5\}\}} - 2 M_{\{\{1, 2, 3, 4, 5\}\}} \\
\Omega(M_{\{\{3, 4\}, \{1, 2, 5\}\}}) &= -M_{\{\{3, 4\}, \{1, 2, 5\}\}} - 2 M_{\{\{1, 2, 3, 4, 5\}\}} \\
\Omega(M_{\{\{1, 2, 3, 4\}, \{5\}\}}) &= -M_{\{\{1, 2, 3, 4\}, \{5\}\}} - 2 M_{\{\{1, 2, 3, 4, 5\}\}} \\
\Omega(M_{\{\{1, 2, 3, 4, 5\}\}}) &= M_{\{\{1, 2, 3, 4, 5\}\}}
\end{aligned}$$

>

omega2(antipode(*)) on X-basis

```
> for i from 1 to 5 do
  print(Omega(S(X[{{seq(j, j=1..i)}}])) =
  ToX(ToM(omega2(antipode(X[{{seq(j, j=1..i)}}]))));
od;
```

$$\Omega(S(X_{\{\{1\}\}})) = -X_{\{\{1\}\}}$$

$$\Omega(S(X_{\{\{1, 2\}\}})) = X_{\{\{1, 2\}\}}$$

$$\Omega(S(X_{\{\{1, 2, 3\}\}})) = -X_{\{\{1, 2, 3\}\}} - 2 X_{\{\{2\}, \{1, 3\}\}} + X_{\{\{1\}, \{2, 3\}\}} + X_{\{\{1, 2\}, \{3\}\}}$$

$$\begin{aligned}
\Omega(S(X_{\{\{1, 2, 3, 4\}\}})) &= -6 X_{\{\{2\}, \{1, 3\}, \{4\}\}} + 2 X_{\{\{3\}, \{1, 2, 4\}\}} - 4 X_{\{\{1, 2\}, \{3, 4\}\}} - 6 X_{\{\{3\}, \{1\}, \{2, 4\}\}} \\
&+ 2 X_{\{\{1, 3\}, \{2, 4\}\}} - 2 X_{\{\{1, 2, 3\}, \{4\}\}} + 6 X_{\{\{3\}, \{2\}, \{1, 4\}\}} + 2 X_{\{\{2, 3\}, \{1, 4\}\}} \\
&- 2 X_{\{\{1\}, \{2, 3, 4\}\}} + 2 X_{\{\{2\}, \{1, 3, 4\}\}} + X_{\{\{1, 2, 3, 4\}\}} + 6 X_{\{\{1\}, \{2, 3\}, \{4\}\}}
\end{aligned}$$

$$\begin{aligned}
\Omega(S(X_{\{\{1, 2, 3, 4, 5\}\}})) &= -6 X_{\{\{2\}, \{4\}, \{1, 3, 5\}\}} - 11 X_{\{\{2\}, \{1, 3\}, \{4\}, \{5\}\}} - 11 X_{\{\{2\}, \{1\}, \{4\}, \{3, 5\}\}} \\
&+ 9 X_{\{\{3\}, \{1\}, \{2, 4, 5\}\}} - 2 X_{\{\{2, 4\}, \{1, 3, 5\}\}} + 9 X_{\{\{3\}, \{1, 2, 4\}, \{5\}\}} - 2 X_{\{\{3, 4\}, \{1, 2, 5\}\}} \\
&- 6 X_{\{\{2, 3\}, \{4\}, \{1, 5\}\}} + 14 X_{\{\{2\}, \{1\}, \{3, 4\}, \{5\}\}} + 24 X_{\{\{1, 2\}, \{4\}, \{3, 5\}\}} \\
&- X_{\{\{3\}, \{2\}, \{1\}, \{4, 5\}\}} - 26 X_{\{\{3\}, \{2\}, \{4\}, \{1, 5\}\}} - 2 X_{\{\{1, 3\}, \{2, 4, 5\}\}} - 21 X_{\{\{1, 2\}, \{3, 4\}, \{5\}\}} \\
&- 2 X_{\{\{1, 2, 4\}, \{3, 5\}\}} + 3 X_{\{\{1, 2, 3, 4\}, \{5\}\}} - 6 X_{\{\{1, 2\}, \{3\}, \{4, 5\}\}} - 6 X_{\{\{2\}, \{3, 4\}, \{1, 5\}\}} \\
&+ 9 X_{\{\{1\}, \{2, 4\}, \{3, 5\}\}} + 8 X_{\{\{1, 2, 3\}, \{4, 5\}\}} - 56 X_{\{\{3\}, \{1\}, \{2, 4\}, \{5\}\}} - 6 X_{\{\{2\}, \{1, 4\}, \{3, 5\}\}} \\
&- 2 X_{\{\{1, 4\}, \{2, 3, 5\}\}} - 6 X_{\{\{3\}, \{2\}, \{1, 4, 5\}\}} - X_{\{\{1, 2, 3, 4, 5\}\}} + 9 X_{\{\{1, 3\}, \{2, 4\}, \{5\}\}} \\
&- 6 X_{\{\{3\}, \{2, 4\}, \{1, 5\}\}} - 21 X_{\{\{1\}, \{2, 3\}, \{4, 5\}\}} - 2 X_{\{\{4\}, \{1, 2, 3, 5\}\}} + 14 X_{\{\{1\}, \{2, 3\}, \{4\}, \{5\}\}} \\
&+ 39 X_{\{\{3\}, \{2\}, \{1, 4\}, \{5\}\}} + 24 X_{\{\{2\}, \{1, 3\}, \{4, 5\}\}} + 39 X_{\{\{3\}, \{1\}, \{4\}, \{2, 5\}\}} \\
&+ 9 X_{\{\{2, 3\}, \{1, 4\}, \{5\}\}} - 2 X_{\{\{2, 3, 4\}, \{1, 5\}\}} - 6 X_{\{\{1, 3\}, \{4\}, \{2, 5\}\}} - 2 X_{\{\{2, 3\}, \{1, 4, 5\}\}} \\
&- 16 X_{\{\{1\}, \{2, 3, 4\}, \{5\}\}} + 9 X_{\{\{1\}, \{3, 4\}, \{2, 5\}\}} + 9 X_{\{\{2\}, \{1, 3, 4\}, \{5\}\}} - 2 X_{\{\{3\}, \{1, 2, 4, 5\}\}} \\
&- X_{\{\{1, 2\}, \{3\}, \{4\}, \{5\}\}} - 6 X_{\{\{3\}, \{1, 4\}, \{2, 5\}\}} - 6 X_{\{\{3\}, \{4\}, \{1, 2, 5\}\}} - 2 X_{\{\{2\}, \{1, 3, 4, 5\}\}} \\
&- X_{\{\{2\}, \{1\}, \{3, 4, 5\}\}} - X_{\{\{1, 2, 3\}, \{4\}, \{5\}\}} + 9 X_{\{\{1\}, \{4\}, \{2, 3, 5\}\}} - 2 X_{\{\{1, 3, 4\}, \{2, 5\}\}} \\
&+ 3 X_{\{\{1\}, \{2, 3, 4, 5\}\}} + 8 X_{\{\{1, 2\}, \{3, 4, 5\}\}}
\end{aligned}$$

```
> for i from 1 to 4 do
  for A in mylasp(i) do
    print(S(Omega(X[A])) = ToX(ToM(antipode(omega2(X[A]))));
  od;
od;
```

$$S(\Omega(X_{\{\{1\}\}})) = -X_{\{\{1\}\}}$$

$$S(\Omega(X_{\{\{2\}, \{1\}\}})) = X_{\{\{2\}, \{1\}\}}$$

$$S(\Omega(X_{\{\{1, 2\}\}})) = X_{\{\{1, 2\}\}}$$

$$S(\Omega(X_{\{\{3\}, \{2\}, \{1\}\}})) = -X_{\{\{3\}, \{2\}, \{1\}\}}$$

$$S(\Omega(X_{\{\{2\}, \{1, 3\}\}})) = X_{\{\{2\}, \{1, 3\}\}} - X_{\{\{1\}, \{2, 3\}\}} - X_{\{\{1, 2\}, \{3\}\}}$$

$$S(\Omega(X_{\{\{1\}, \{2, 3\}\}})) = -X_{\{\{1, 2\}, \{3\}\}}$$

$$S(\Omega(X_{\{\{1, 2\}, \{3\}\}})) = -X_{\{\{1\}, \{2, 3\}\}}$$

$$S(\Omega(X_{\{\{1, 2, 3\}\}})) = -X_{\{\{1, 2, 3\}\}} - 2X_{\{\{2\}, \{1, 3\}\}} + X_{\{\{1\}, \{2, 3\}\}} + X_{\{\{1, 2\}, \{3\}\}}$$

$$S(\Omega(X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}})) = X_{\{\{3\}, \{2\}, \{1\}, \{4\}\}}$$

$$S(\Omega(X_{\{\{3\}, \{2\}, \{1, 4\}\}})) = -2X_{\{\{2\}, \{1, 3\}, \{4\}\}} + X_{\{\{2\}, \{1\}, \{3, 4\}\}} - 2X_{\{\{3\}, \{1\}, \{2, 4\}\}} \\ + X_{\{\{3\}, \{2\}, \{1, 4\}\}} + 2X_{\{\{1\}, \{2, 3\}, \{4\}\}} + X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

$$S(\Omega(X_{\{\{3\}, \{1\}, \{2, 4\}\}})) = -X_{\{\{2\}, \{1, 3\}, \{4\}\}} + X_{\{\{1\}, \{2, 3\}, \{4\}\}} + X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

$$S(\Omega(X_{\{\{2\}, \{1\}, \{3, 4\}\}})) = X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

$$S(\Omega(X_{\{\{2\}, \{1, 3\}, \{4\}\}})) = X_{\{\{2\}, \{1\}, \{3, 4\}\}} - X_{\{\{3\}, \{1\}, \{2, 4\}\}} + X_{\{\{1\}, \{2, 3\}, \{4\}\}}$$

$$S(\Omega(X_{\{\{1\}, \{2, 3\}, \{4\}\}})) = X_{\{\{1\}, \{2, 3\}, \{4\}\}}$$

$$S(\Omega(X_{\{\{1, 2\}, \{3\}, \{4\}\}})) = X_{\{\{2\}, \{1\}, \{3, 4\}\}}$$

$$S(\Omega(X_{\{\{2\}, \{1, 3, 4\}\}})) = 2X_{\{\{2\}, \{1, 3\}, \{4\}\}} - 2X_{\{\{2\}, \{1\}, \{3, 4\}\}} + 4X_{\{\{3\}, \{1\}, \{2, 4\}\}} \\ + X_{\{\{1, 2, 3\}, \{4\}\}} - 2X_{\{\{3\}, \{2\}, \{1, 4\}\}} + X_{\{\{1\}, \{2, 3, 4\}\}} - X_{\{\{2\}, \{1, 3, 4\}\}} - X_{\{\{1\}, \{2, 3\}, \{4\}\}} \\ - X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

$$S(\Omega(X_{\{\{1\}, \{2, 3, 4\}\}})) = 2X_{\{\{2\}, \{1, 3\}, \{4\}\}} + X_{\{\{1, 2, 3\}, \{4\}\}} - X_{\{\{1\}, \{2, 3\}, \{4\}\}} - X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

$$S(\Omega(X_{\{\{2, 3\}, \{1, 4\}\}})) = 2X_{\{\{2\}, \{1, 3\}, \{4\}\}} + X_{\{\{2\}, \{1\}, \{3, 4\}\}} + 2X_{\{\{1, 2\}, \{3, 4\}\}} \\ + 2X_{\{\{3\}, \{1\}, \{2, 4\}\}} - 2X_{\{\{3\}, \{2\}, \{1, 4\}\}} - X_{\{\{2, 3\}, \{1, 4\}\}} - 4X_{\{\{1\}, \{2, 3\}, \{4\}\}} \\ + X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

$$S(\Omega(X_{\{\{1, 3\}, \{2, 4\}\}})) = X_{\{\{2\}, \{1\}, \{3, 4\}\}} + 2X_{\{\{1, 2\}, \{3, 4\}\}} - X_{\{\{1, 3\}, \{2, 4\}\}} - 2X_{\{\{1\}, \{2, 3\}, \{4\}\}} \\ + X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

$$S(\Omega(X_{\{\{1, 2\}, \{3, 4\}\}})) = X_{\{\{1, 2\}, \{3, 4\}\}}$$

$$S(\Omega(X_{\{\{3\}, \{1, 2, 4\}\}})) = 4X_{\{\{2\}, \{1, 3\}, \{4\}\}} - X_{\{\{3\}, \{1, 2, 4\}\}} - X_{\{\{2\}, \{1\}, \{3, 4\}\}} + 2X_{\{\{3\}, \{1\}, \{2, 4\}\}} \\ + X_{\{\{1, 2, 3\}, \{4\}\}} - 2X_{\{\{3\}, \{2\}, \{1, 4\}\}} + X_{\{\{1\}, \{2, 3, 4\}\}} - X_{\{\{1\}, \{2, 3\}, \{4\}\}} - 2X_{\{\{1, 2\}, \{3\}, \{4\}\}}$$

$$S(\Omega(X_{\{\{1, 2, 3\}, \{4\}\}})) = -X_{\{\{2\}, \{1\}, \{3, 4\}\}} + 2X_{\{\{3\}, \{1\}, \{2, 4\}\}} + X_{\{\{1\}, \{2, 3, 4\}\}} - X_{\{\{1\}, \{2, 3\}, \{4\}\}}$$

$$S(\Omega(X_{\{\{1, 2, 3, 4\}\}})) = -6X_{\{\{2\}, \{1, 3\}, \{4\}\}} + 2X_{\{\{3\}, \{1, 2, 4\}\}} - 4X_{\{\{1, 2\}, \{3, 4\}\}} - 6X_{\{\{3\}, \{1\}, \{2, 4\}\}} \\ + 2X_{\{\{1, 3\}, \{2, 4\}\}} - 2X_{\{\{1, 2, 3\}, \{4\}\}} + 6X_{\{\{3\}, \{2\}, \{1, 4\}\}} + 2X_{\{\{2, 3\}, \{1, 4\}\}} \\ - 2X_{\{\{1\}, \{2, 3, 4\}\}} + 2X_{\{\{2\}, \{1, 3, 4\}\}} + X_{\{\{1, 2, 3, 4\}\}} + 6X_{\{\{1\}, \{2, 3\}, \{4\}\}}$$

>

omega2(antipode(*)) on the M-basis

```
> for i from 1 to 5 do
  print(Omega(S(M[{{seq(j,j=1..i)}}])) =
  ToM(omega2(antipode(M[{{seq(j,j=1..i)}}])));
od;
```

$$\Omega(S(M_{\{\{1\}\}})) = -M_{\{\{1\}\}}$$

$$\Omega(S(M_{\{\{1, 2\}\}})) = M_{\{\{1, 2\}\}}$$

$$\Omega(S(M_{\{\{1, 2, 3\}\}})) = -M_{\{\{1, 2, 3\}\}}$$

$$\Omega(S(M_{\{\{1, 2, 3, 4\}\}})) = M_{\{\{1, 2, 3, 4\}\}}$$

$$\Omega(S(M_{\{\{1, 2, 3, 4, 5\}\}})) = -M_{\{\{1, 2, 3, 4, 5\}\}}$$

```
> for i from 1 to 4 do
  for A in mylasp(i) do
    print(S(Omega(M[A])) = ToM(antipode(omega2(M[A]))));
  od;
od;
```

$$S(\Omega(M_{\{\{1\}\}})) = -M_{\{\{1\}\}}$$

$$S(\Omega(M_{\{\{2\}, \{1\}\}})) = M_{\{\{2\}, \{1\}\}}$$

$$S(\Omega(M_{\{\{1, 2\}\}})) = M_{\{\{1, 2\}\}}$$

$$S(\Omega(M_{\{\{3\}, \{2\}, \{1\}\}})) = -M_{\{\{3\}, \{2\}, \{1\}\}} + M_{\{\{1\}, \{2, 3\}\}} + M_{\{\{1, 2\}, \{3\}\}} - 2M_{\{\{2\}, \{1, 3\}\}}$$

$$S(\Omega(M_{\{\{2\}, \{1, 3\}\}})) = M_{\{\{2\}, \{1, 3\}\}} - M_{\{\{1\}, \{2, 3\}\}} - M_{\{\{1, 2\}, \{3\}\}}$$

$$S(\Omega(M_{\{\{1\}, \{2, 3\}\}})) = -M_{\{\{1, 2\}, \{3\}\}}$$

$$S(\Omega(M_{\{\{1, 2\}, \{3\}\}})) = -M_{\{\{1\}, \{2, 3\}\}}$$

$$S(\Omega(M_{\{\{1, 2, 3\}\}})) = -M_{\{\{1, 2, 3\}\}}$$

$$\begin{aligned} S(\Omega(M_{\{\{3\}, \{2\}, \{1\}, \{4\}\}})) &= 4M_{\{\{2\}, \{1, 3\}, \{4\}\}} - 2M_{\{\{3\}, \{1, 2, 4\}\}} - 4M_{\{\{1\}, \{2, 3\}, \{4\}\}} \\ &- 2M_{\{\{1, 2\}, \{3\}, \{4\}\}} + 2M_{\{\{1, 2, 3\}, \{4\}\}} + M_{\{\{3\}, \{2\}, \{1\}, \{4\}\}} - 2M_{\{\{2\}, \{1, 3, 4\}\}} \\ &+ 2M_{\{\{1\}, \{2, 3, 4\}\}} - 6M_{\{\{2, 3\}, \{1, 4\}\}} + 6M_{\{\{1, 3\}, \{2, 4\}\}} + 4M_{\{\{3\}, \{1\}, \{2, 4\}\}} \\ &- 2M_{\{\{2\}, \{1\}, \{3, 4\}\}} \end{aligned}$$

$$\begin{aligned} S(\Omega(M_{\{\{3\}, \{2\}, \{1, 4\}\}})) &= -2M_{\{\{2\}, \{1, 3\}, \{4\}\}} + M_{\{\{3\}, \{1, 2, 4\}\}} + 2M_{\{\{1\}, \{2, 3\}, \{4\}\}} \\ &+ M_{\{\{1, 2\}, \{3\}, \{4\}\}} - M_{\{\{1, 2, 3\}, \{4\}\}} + M_{\{\{2\}, \{1, 3, 4\}\}} - M_{\{\{1\}, \{2, 3, 4\}\}} + 4M_{\{\{2, 3\}, \{1, 4\}\}} \\ &+ M_{\{\{3\}, \{2\}, \{1, 4\}\}} - 4M_{\{\{1, 3\}, \{2, 4\}\}} - 2M_{\{\{3\}, \{1\}, \{2, 4\}\}} + M_{\{\{2\}, \{1\}, \{3, 4\}\}} \end{aligned}$$

$$\begin{aligned} S(\Omega(M_{\{\{3\}, \{1\}, \{2, 4\}\}})) &= 2M_{\{\{3\}, \{1, 2, 4\}\}} - M_{\{\{1, 2, 3\}, \{4\}\}} - M_{\{\{1, 2\}, \{3, 4\}\}} - M_{\{\{2\}, \{1, 3\}, \{4\}\}} \\ &- M_{\{\{2\}, \{1, 3, 4\}\}} + M_{\{\{1, 2\}, \{3\}, \{4\}\}} + M_{\{\{1\}, \{2, 3\}, \{4\}\}} + M_{\{\{2, 3\}, \{1, 4\}\}} \end{aligned}$$

$$\begin{aligned} S(\Omega(M_{\{\{2\}, \{1\}, \{3, 4\}\}})) &= -M_{\{\{1\}, \{2, 3, 4\}\}} + M_{\{\{2\}, \{1, 3, 4\}\}} + M_{\{\{1, 2\}, \{3\}, \{4\}\}} - M_{\{\{1, 2, 3\}, \{4\}\}} \\ &+ M_{\{\{3\}, \{1, 2, 4\}\}} \end{aligned}$$

$$\begin{aligned} S(\Omega(M_{\{\{2\}, \{1, 3\}, \{4\}\}})) &= -M_{\{\{1\}, \{2, 3, 4\}\}} - M_{\{\{1, 2\}, \{3, 4\}\}} - M_{\{\{3\}, \{1\}, \{2, 4\}\}} - M_{\{\{3\}, \{1, 2, 4\}\}} \\ &+ M_{\{\{2\}, \{1\}, \{3, 4\}\}} + M_{\{\{1\}, \{2, 3\}, \{4\}\}} + M_{\{\{2, 3\}, \{1, 4\}\}} + 2M_{\{\{2\}, \{1, 3, 4\}\}} \end{aligned}$$

$$S(\Omega(M_{\{\{1\}, \{2, 3\}, \{4\}\}})) = -2 M_{\{\{1, 2\}, \{3, 4\}\}} + M_{\{\{1\}, \{2, 3\}, \{4\}\}} + 2 M_{\{\{2, 3\}, \{1, 4\}\}}$$

$$S(\Omega(M_{\{\{1, 2\}, \{3\}, \{4\}\}})) = M_{\{\{2\}, \{1\}, \{3, 4\}\}} + M_{\{\{2\}, \{1, 3, 4\}\}} - M_{\{\{1\}, \{2, 3, 4\}\}} + M_{\{\{3\}, \{1, 2, 4\}\}} - M_{\{\{1, 2, 3\}, \{4\}\}}$$

$$S(\Omega(M_{\{\{2\}, \{1, 3, 4\}\}})) = -M_{\{\{2\}, \{1, 3, 4\}\}} + M_{\{\{1\}, \{2, 3, 4\}\}} + M_{\{\{1, 2, 3\}, \{4\}\}}$$

$$S(\Omega(M_{\{\{1\}, \{2, 3, 4\}\}})) = M_{\{\{1, 2, 3\}, \{4\}\}}$$

$$S(\Omega(M_{\{\{2, 3\}, \{1, 4\}\}})) = -M_{\{\{2, 3\}, \{1, 4\}\}} + 2 M_{\{\{1, 2\}, \{3, 4\}\}}$$

$$S(\Omega(M_{\{\{1, 3\}, \{2, 4\}\}})) = -M_{\{\{1, 3\}, \{2, 4\}\}} + 2 M_{\{\{1, 2\}, \{3, 4\}\}}$$

$$S(\Omega(M_{\{\{1, 2\}, \{3, 4\}\}})) = M_{\{\{1, 2\}, \{3, 4\}\}}$$

$$S(\Omega(M_{\{\{3\}, \{1, 2, 4\}\}})) = -M_{\{\{3\}, \{1, 2, 4\}\}} + M_{\{\{1\}, \{2, 3, 4\}\}} + M_{\{\{1, 2, 3\}, \{4\}\}}$$

$$S(\Omega(M_{\{\{1, 2, 3\}, \{4\}\}})) = M_{\{\{1\}, \{2, 3, 4\}\}}$$

$$S(\Omega(M_{\{\{1, 2, 3, 4\}\}})) = M_{\{\{1, 2, 3, 4\}\}}$$

>