

$$\begin{aligned} \textcircled{1} \quad \langle \bigcirc \bigcirc \rangle &= (-A^2 - A^{-2}) \langle \bigcirc \rangle \\ &= -A^2 - A^{-2} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad \langle \bigcirc \rangle &= A \langle \bigcirc \rangle + A^{-1} \langle \bigcirc \rangle \\ &= A(-A^2 - A^{-2}) + A^{-1} \quad (\text{from 1.}) \\ &= -A^3 - A^{-1} + A^{-1} = -A^3 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \quad \langle \bigcirc \rangle &= A \langle \bigcirc \rangle + A^{-1} \langle \bigcirc \rangle \\ &= A \cdot 1 + A^{-1}(-A^2 - A^{-2}) \quad (\text{from 1.}) \\ &= A - A - A^{-3} = -A^{-3} \end{aligned}$$

$\textcircled{4}$ The Hopf Link

$$\begin{aligned} \langle \bigcirc \bigcirc \rangle &= A \langle \bigcirc \rangle + A^{-1} \langle \bigcirc \rangle \\ &= A(-A^3) + A^{-1}(-A^{-3}) \quad (\text{from 2 \& 3}) \\ &= -A^4 - A^{-4} \end{aligned}$$

$$\begin{aligned} \textcircled{5} \quad \langle \bigcirc \rangle &= A \langle \bigcirc \rangle + A^{-1} \langle \bigcirc \rangle \\ &= A(-A^2 - A^{-2}) \langle \bigcirc \rangle + A^{-1} \langle \bigcirc \rangle \\ &= [A(-A^2 - A^{-2}) + A^{-1}] \langle \bigcirc \rangle \\ &= [-A^3 - A^{-1} + A^{-1}] (-A^3) \quad (\text{from 2.}) \\ &= A^6 \end{aligned}$$

$\textcircled{6}$ The Left-Handed Trefoil

$$\begin{aligned} \langle \bigcirc \rangle &= A \langle \bigcirc \rangle + A^{-1} \langle \bigcirc \rangle \\ &= A(A^6) + A^{-1}(-A^4 - A^{-4}) \quad (\text{from 4 \& 5}) \\ &= A^7 - A^3 - A^{-5} \end{aligned}$$