$$
\begin{aligned}
& 2 x^4 - 16 u^2 x^4 + 32 u^4 x^4 + x^3 y + 6 u x^3 y - 4 u^2 x^3 y - 24 u^3 x^3 y - 32 u v x^3 y + \\
& 128 u^3 v x^3 y - 6 x^2 y^2 - 12 u x^2 y^2 - 16 u^2 x^2 y^2 + 6 v x^2 y^2 - 8 u v x^2 y^2 - 72 u^2 v x^2 y^2 - \\
& 16 v^2 x^2 y^2 + 192 u^2 v^2 x^2 y^2 + x y^3 + 6 u x y^3 - 12 v x y^3 - 32 u v x y^3 - 4 v^2 x y^3 - \\
& 72 u v^2 x y^3 + 128 u v^3 x y^3 + 2 y^4 + 6 v y^4 - 16 v^2 y^4 - 24 v^3 y^4 + 32 v^4 y^4 - 10 x^4 \sigma - \\
& 36 u x^4 \sigma - 24 u^2 x^4 \sigma + 16 u^3 x^4 \sigma + 4 x^3 y \sigma + 12 u x^3 y \sigma - 16 u^3 x^3 y \sigma - 36 v x^3 y \sigma - \\
& 48 u v x^3 y \sigma + 48 u^2 v x^3 y \sigma + 12 x^2 y^2 \sigma + 12 u x^2 y^2 \sigma + 24 u^2 x^2 y^2 \sigma + 12 v x^2 y^2 \sigma - \\
& 48 u^2 v x^2 y^2 \sigma - 24 v^2 x^2 y^2 \sigma + 48 u v^2 x^2 y^2 \sigma + 4 x y^3 \sigma + 12 u x y^3 \sigma + 12 v x y^3 \sigma + \\
& 48 u v x y^3 \sigma - 48 u v^2 x y^3 \sigma + 16 v^3 x y^3 \sigma - 10 y^4 \sigma + 12 v y^4 \sigma + 24 v^2 y^4 \sigma - 16 v^3 y^4 \sigma + \\
& 24 u x^4 \sigma^2 + 24 u^2 x^4 \sigma^2 - 16 u^3 x^4 \sigma^2 + 16 u^3 x^3 y \sigma^2 + 24 v x^3 y \sigma^2 + 48 u v x^3 y \sigma^2 - \\
& 48 u^2 v x^3 y \sigma^2 - 24 u^2 x^2 y^2 \sigma^2 + 48 u^2 v x^2 y^2 \sigma^2 + 24 v^2 x^2 y^2 \sigma^2 - 48 u v^2 x^2 y^2 \sigma^2 - \\
& 24 u x y^3 \sigma^2 - 48 u v x y^3 \sigma^2 + 48 u v^2 x y^3 \sigma^2 - 16 v^3 x y^3 \sigma^2 - 24 v y^4 \sigma^2 - 24 v^2 y^4 \sigma^2 + \\
& 16 v^3 y^4 \sigma^2 + 20 x^4 \sigma^3 + 24 u x^4 \sigma^3 - 8 x^3 y \sigma^3 - 24 u x^3 y \sigma^3 + 24 v x^3 y \sigma^3 - 24 x^2 y^2 \sigma^3 - \\
& 24 u x^2 y^2 \sigma^3 - 24 v x^2 y^2 \sigma^3 - 8 x y^3 \sigma^3 + 24 u x y^3 \sigma^3 - 24 v x y^3 \sigma^3 + 20 y^4 \sigma^3 + \\
& 24 v y^4 \sigma^3 - 10 x^4 \sigma^4 - 12 u x^4 \sigma^4 + 4 x^3 y \sigma^4 + 12 u x^3 y \sigma^4 - 12 v x^3 y \sigma^4 + 12 x^2 y^2 \sigma^4 + \\
& 12 u x^2 y^2 \sigma^4 + 12 v x^2 y^2 \sigma^4 + 4 x y^3 \sigma^4 - 12 u x y^3 \sigma^4 + 12 v x y^3 \sigma^4 - 10 y^4 \sigma^4 - 12 v y^4 \sigma^4
\end{aligned}
$$