$$
\begin{array}{r|rrrr}
 & x^2 & & & \\
\hline
x+1 & x^3 - & x^2 + & & 2 \\
 & x^3 + & x^2 & & \\
\hline
 & & -2x^2 & &
\end{array}
\longleftarrow x^2(x+1)
$$