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$(\mathbf{x} - 1)(x + \mathbf{2}) = x^2 + \mathbf{2x}$

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$(x-\mathbf{1})(\mathbf{x}+2) = x^2 + 2x - \mathbf{x}$

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$$
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x \\
x^2 + x - 2 \overline{)\ x^3 - 3x + 2}
\end{array}
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-\,x^2 \;- x + 2 \\
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Conclusion: $\qquad \dfrac{x^3 - 3x + 2}{(x-1)(x+2)} = x - 1$

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$$
\begin{array}{r}
x - 1 \\
x^2 + x - 2 \overline{)\ x^3 \qquad\ - 3x + 2} \\
\underline{-x^3 - x^2 + 2x} \qquad\quad \\
-x^2\ - x + 2 \\
\underline{x^2\ + x - 2} \\
0
\end{array}
$$

Conclusion: $\quad \dfrac{x^3 - 3x + 2}{(x-1)(x+2)} = x - 1$

Alternatively: $\quad x^3 - 3x + 2 = (x-1) \cdot (x+2) \cdot (x-1)$