$$
\begin{aligned}
a_n \frac{\mathrm{d}^n y}{\mathrm{d}t^n} + a_{n-1} \frac{\mathrm{d}^{n-1} y}{\mathrm{d}t^{n-1}} + \cdots + a_0 \cdot y &= b_q \frac{\mathrm{d}^q u}{\mathrm{d}t^q} + b_{q-1} \frac{\mathrm{d}^{q-1} u}{\mathrm{d}t^{q-1}} + \cdots + b_0 \cdot u \\
(a_n p^n + a_{n-1} p^{n-1} + \cdots + a_0) Y(p) &= (b_q p^q + b_{q-1} p^{q-1} + \cdots + b_0) U(p) \\
Y(p) &= \frac{b_q p^q + b_{q-1} p^{q-1} + \cdots + b_0}{a_n p^n + a_{n-1} p^{n-1} + \cdots + a_0} \cdot U(p)
\end{aligned}
$$