

$$G_3 \text{ und } H_3: \quad \hat{r} = r - d + 1 = 3 - 2 + 1 = 2$$

$$\begin{aligned} \frac{B}{A} &= \frac{1}{1 - 2q^{-1} + q^{-2}} = \frac{q^2}{q^2 - 2q + 1} \\ &\quad \begin{array}{l} 1 \rightarrow \frac{2q^2 - 1q}{q^2 - 2q + 1} q^{-1} \\ 2 \rightarrow \frac{3q^2 - 2q}{q^2 - 2q + 1} q^{-2} \end{array} = q^{-2} \frac{3 - 2q^{-1}}{1 - 2q^{-1} + q^{-2}} \end{aligned}$$

$$\begin{aligned} \Rightarrow \frac{B}{A} &= 1 + 2q^{-1} + q^{-2} \frac{3 - 2q^{-1}}{1 - 2q^{-1} + q^{-2}} \\ &= G_3 + q^{-2} \frac{H_2}{A} \end{aligned}$$