

$$\begin{array}{c}
\frac{\frac{\frac{7, 3 \vdash (7, 3, 1)}{} \text{A} \quad \frac{\frac{\frac{2, 1 \vdash (2, 1, 1)}{} \text{A}}{1^{2-1} = 1(\text{mod } 2) \vdash 2} \text{R}_2}}{3^{(7-1)/2} \neq 1(\text{mod } 7) \vdash (7, 3, 2)} \text{R}_1 \quad \frac{\frac{\frac{\frac{3, 2 \vdash (3, 2, 1)}{} \text{A}}{1^{2-1} = 1(\text{mod } 2) \vdash 2} \text{R}_2}}{2^{(3-1)/2} \neq 1(\text{mod } 3) \vdash (3, 2, 2)} \text{R}_1}{2^{3-1} = 1(\text{mod } 3) \vdash 3} \text{R}_2 \\
\hline
\frac{3^{(7-1)/3} \neq 1(\text{mod } 7) \vdash (7, 3, 6)}{3^{7-1} = 1(\text{mod } 7) \vdash 7} \text{R}_1 \text{R}_2
\end{array}$$