

Algebra / Simplifying a higher radical expression: Multivariate

$$\begin{array}{c}
 \sqrt[4]{81 s^{13} t^7} \\
 \begin{array}{c} \nearrow \nwarrow \\ 9 \quad 9 \\ 3 \quad 3 \quad 3 \quad 3 \end{array}
 \end{array}
 \quad
 \begin{array}{c}
 \underbrace{3 \cdot 3 \cdot 3 \cdot 3}_{\frac{13}{4} = 3r1} \underbrace{s s s s s s s s}_{\frac{7}{4} = 1r3} \underbrace{t t t t t}_{\frac{7}{4} = 1r3} \\
 3 s^3 t^1 \sqrt[4]{s t^3}
 \end{array}$$

$$\begin{array}{c}
 \sqrt[3]{32 y^{10} z^3} \\
 \begin{array}{c} \nearrow \nwarrow \\ 2 \quad 16 \\ 2 \quad 8 \\ 2 \quad 4 \\ 2 \quad 2 \end{array}
 \end{array}
 \quad
 \begin{array}{c}
 \underbrace{2 \cdot 2 \cdot 2 \cdot 2}_{\frac{10}{3} = 3r1} \underbrace{y y y y y y y y}_{\frac{3}{3} = 1} \underbrace{z z z}_{\frac{3}{3} = 1} \\
 2 y^3 z \sqrt[3]{4 y}
 \end{array}$$