

$$\frac{(3^8)(3^4-1)}{(3^4)(1+3^2)} = \frac{3^8(80)}{3^6(10)} = \frac{3^2(8)}{3^2(2^3)}$$

$$\begin{array}{r} 2 \\ 27 \\ \underline{3} \\ 81 \end{array}$$

Can also just keep the  $3^{12}$  as a base

### Drill #8

56.  $\sqrt{36^2 + 15^2}$

Simplify

$$\begin{array}{cc} 36 & 15 \\ \wedge & \wedge \\ 66 & 35 \\ \wedge \wedge & \\ 2323 & \end{array}$$

NO

$$\sqrt{(2^2)(3^2)^2 + (3^2)(5^2)}$$

Why cant you do it like the below

$$\sqrt{4 \cdot 9 + 9 \cdot 25}$$

$$\sqrt{36 \cdot 36 + 15 \cdot 15}$$

$$2 \cdot 3 \cdot 3 \cdot 5 =$$

$$\begin{array}{r} 6 \cdot 3 \\ 18 \\ \underline{5} \\ 90 \end{array}$$

$$\sqrt{(2^2)(3^2)(2^2)(3^2) + (3 \cdot 5)(3 \cdot 5)}$$

$$\begin{array}{r} 2 \cdot 3 \cdot 2 \cdot 3 \\ 6 \quad 12 \quad 36 \end{array}$$