

$$\frac{1}{16} \cdot 4^{2x} = \frac{1}{64}$$

$$\frac{1}{4^2} \cdot 4^{2x} = \frac{1}{4^3} \quad \leftarrow \text{Get same base}$$

$$4^{-2} \cdot 4^{2x} = 4^{-3} \quad \leftarrow \text{Everything on same level}$$

$$4^{-2+2x} = 4^{-3} \quad \leftarrow \text{Exponent Property}$$

$$\begin{array}{r} -2+2x = -3 \\ +2 \quad +2 \\ \hline 2x = -1 \\ x = -\frac{1}{2} \end{array} \quad \leftarrow \text{Drop out bases \& solve for variable}$$

$$6^{2x} \cdot 36 = 216$$

$$6^{2x} \cdot 6^2 = 6^3$$

$$6^{2x+2} = 6^3$$

$$\begin{array}{r} 2x+2 = 3 \\ -2 \quad -2 \\ \hline 2x = 1 \\ x = \frac{1}{2} \end{array}$$

$$\frac{6^{n-1}}{6^{3n}} = 216$$

$$\frac{6^{n-1}}{6^{3n}} = 6^3 \quad \text{or}$$

$$6^{n-1} \cdot 6^{-3n} = 6^3$$

$$6^{n-1-3n} = 6^3$$

$$\frac{6^{n-1}}{6^{3n}} = 6^3$$

$$6^{n-1-3n} = 6^3$$

$$n-1-3n=3$$

$$-2n-1=3$$

$$-2n=4$$

$$n=-2$$

$$3 \sqrt[5]{160x^5y^7}$$

$$3 \cdot 2 \sqrt[5]{5x^5y^7}$$

$$6 \sqrt[5]{5x^5y^7}$$

$$6xy \sqrt[5]{5y^2}$$

$$\begin{array}{r} 5 \overline{)160} \\ \underline{2 \overline{)32}} \\ 2 \overline{)16} \\ \underline{2 \overline{)8}} \\ 2 \overline{)4} \\ \underline{2} \end{array}$$

$$(16a^4)^{\frac{3}{2}}$$

$$(\sqrt{16a^4})^3$$

$$(4a^2)^3$$

$$64a^6$$