Name: _____   Date: _____

Learning Goal 5.2	Use exponent laws to evaluate expression with positive and negative rational exponents.

Recall:

1. $3^6 3^2 =$

2. $6^3 6^7 6^2 6^5 =$

3. $7^6 7^3 7 =$

Extend the idea to non-whole number exponents:

4. $2^{1/2} 2^{1/2} =$

5. $5^{0.25} 5^{0.25} 5^{0.25} 5^{0.25} =$

6. $11^{1/3} 11^{1/3} 11^{1/3} =$

Take a silent moment. What do you think the **fractional exponents** represent?

Example Write each power as a radical, then simplify.

1. $1000^{1/3}$

2. $0.25^{-1/2}$

3. $(-8)^{1/3}$

4. $\left(\frac{16}{81}\right)^{-1/4}$

What if the exponent is not a unit fraction? Take a silent minute to consider.

$$40^{\frac{2}{3}}$$

Example Write each power as a radical, then simplify.

1. $0.01^{3/2}$

2. $(-27)^{4/3}$

3. $81^{-3/4}$

4. $0.75^{-1.2}$

Assignment   Handout   Quiz: Tomorrow!