

Simplify:

Warm Up

$$1. 7^5 \cdot 7^3$$

7^8

$$2. \frac{9^9 \cdot 4^4}{9 \cdot 4^2}$$

$\frac{9^9}{9} \cdot \frac{4^4}{4^2}$

$9^8 \cdot 4^2$

$$3. (3^2)^2$$

Negative Exponents

Negative Exponents

*Negative exponents DO NOT mean negative answers!!!

$$x^{-n} = \frac{1}{x^n}$$

$$\left(\frac{1}{x}\right)^{-n} = x^n$$

$$2^{-2} = \frac{1}{4}$$

$$\frac{3^{-3}}{1} = \frac{1}{3^3} = \frac{1}{27}$$

$$\frac{x^{-4}}{1} = \frac{1}{x^4}$$

$$\left(\frac{1}{5}\right)^{-2} = 5^2$$

$$4^3 \left(\frac{1}{4}\right)^{-3}$$

You try!

$$4^{-2} \quad \frac{1}{4^2}$$

$$\frac{1}{n^{-5}} \quad \frac{1}{\frac{1}{n^5}}$$

$$\frac{6^{-1}}{1} \quad \frac{1}{6}$$

$$\left(\frac{1}{8}\right)^{-2} \\ 8^2$$

$$\left(\frac{1}{6}\right)^{-1} \\ 6$$

$$3^7 \cdot 3^{-4}$$

$$\frac{3^7}{3^4}$$

$$3^{7+(-4)}$$

$$3^{-2}$$

$$\frac{1}{3^2}$$

$$(5^{-8})^3$$

$$5^{-24}$$

$$\frac{1}{5^{24}}$$

$$\frac{7^9}{7^{-12}}$$

$$7^{9+(-(-12))}$$

$$7^{21}$$

For each problem decide if it is equivalent to 5^3 , 5^{-3} or neither.

	5^3	5^{-3}	neither
$(5^{-1})^3$		✓	
$(5^{-1})^{-2}$			✓
$(\frac{1}{5})^{-3}$	5^3 /		
$(\frac{1}{5})^3$			✓

Video/Song

There will be class time on Friday, Nov 15 to work on it. There will be random times after lessons to also work. Make sure to check the rubric to meet requirements.