Created by Mr. Lischwe

WARMUP 1/$\left(0.1425 \times 10^2 - \left(\frac{1}{2}\right)^2\right)$

1. Expand: $8f^3$.

2. Copy the date problem from above and show work to verify that it is correct. (Today is the 14th)

3. Evaluate all three: -4^4 $(-4)^4$ $-\left(4^4\right)$

2 VOLUNTEERS

- 1 to collect corrections
- 1 to collect extension
- **GIVE THEM YOUR ORIGINAL TEST PACKET TOO!**

Table of Contents (2nd Semester)

Multiplying & Dividing Powers

Objective:

Use exponent rules to simplify expressions

What do you think this answer would be???

- $8^5 \cdot 8^2$

8^3?

8^7?

8^{10}?

8^{25}?

Something else???

What do you think this answer would be???

- $\frac{2^{10}}{2^5}$

2^2?

2^5?

2^{15}?

Something else???

Activity: Learn & Teach

- **There are two important rules to learn today – one for each problem we just looked at.**
- **Half the tables will learn one rule and half the tables will learn the other.**
- **Then I will pair tables together and each table will teach the other table their rule.**

GOOD GROUP-MATES…

1. **respect one another.**
2. **all contribute to the group.**
3. **help each other understand!**
4. **work together, not separately.**
5. **don't distract each other by talking.**
6. **get their group-mates back on track if they are distracted.**

The Rules…

Multiplying Powers with the same base

- Keep the base, add the exponents

Dividing Powers with the same base

- Keep the base, subtract the exponents

What do you think this answer would be???

- $8^5 \cdot 8^2$

8^3?

8^7?

8^{10}?

8^{25}?

Something else???

The exponent just "keeps track" of how many 8's you're multiplying. First you were multiplying five 8's. Then you have two more. Altogether, you are multiplying seven 8's.

What do you think this answer would be???

$$\frac{2^{10}}{2^5}$$

2^2?

The five 2's from the denominator will divide with five 2's from the numerator to equal 1. There will be five 2's remaining in the numerator.

2^5?

2^{15}?

Something else???

Try it with numbers…

$2^3 \cdot 2^2$

$8 \cdot 4$ **=32 which is 2^5**

$\frac{2^6}{2^3}$ $\frac{64}{8}$ **=8 which is 2^3**

$2^1 = 2$
$2^2 = 4$
$2^3 = 8$
$2^4 = 16$
$2^5 = 32$
$2^6 = 64$
$2^7 = 128$
$2^8 = 256$

Examples: Multiplying

1. $a^{45} \cdot a^{22}$ a^{67}

2. $6^{5} \cdot 6^{3}$ 6^{8}

3. $x^{3} \cdot y^{5} \cdot y^{2} \cdot x$ $x^{4} \cdot y^{7}$

4. $12j^{5} \cdot 3j^{2}$ $12 \cdot j \cdot j \cdot j \cdot j \cdot j \cdot 3 \cdot j \cdot j = 36j^{7}$

HOMEWORK

- Textbook p. 27 (1-6, 8, 14-18)