

Learning Goal:

The goal for today is to activate prior mathematics knowledge in the following areas:

- integers (adding/subtracting/multiplying/dividing)
- Order of operations (BEDMAS)
- basic exponent rules
- solving equations

Sep 5-1:52 PM

## Integer Operations

Evaluate the following:

(a)  $4 + (-9) + 6 + (-12)$

(b)  $5 - (-6)$

(c)  $34 - (-21) + (-12) - 20$

Sep 5-1:55 PM

### Integer Operations

Evaluate the following:

(a)  $(5)(-9)$

(b)  $(-6)(-4)$

(c)  $(-2)(-12)(-2)$

(d)  $(-24) / (-8)$

Sep 5-1:55 PM

### Integer Summary

The rules for adding/subtracting are DIFFERENT from the rules for multiplying and dividing.

Example

$$(-2) + (-3) =$$

$$(-2) \times (-3) =$$

Sep 5-2:00 PM

Order of Operations (BEDMAS)

B - brackets

E - exponents

D - division

M - Multiplication

A - addition

S - subtraction

Note "D" and "M" can be switched, "A" and "S" can be switched.

Sep 5-2:02 PM

Sep 5-2:05 PM

## Order of Operations - BEDMAS

Evaluate the following:

(a)  $(3)(-9) + (4)(2)$

(b)  $(-5)(-4)^2$

(c)  $(-2)(-12) - (-2)^3$

Sep 5-1:55 PM

Solving Equations

To solve equations we must use the opposite operation approach to isolate the desired variable.

Isolating a variable means to make the coefficient (number in front of the letter) equal to "1" AND to have the variable (letter) in the "top" or numerator position.

Solve

$$2a - 7 = 19$$

Sep 5-2:48 PM

Solve the following:

$$\frac{a}{6} + 9 = -2$$

$$\frac{a}{7} = \frac{10}{14}$$

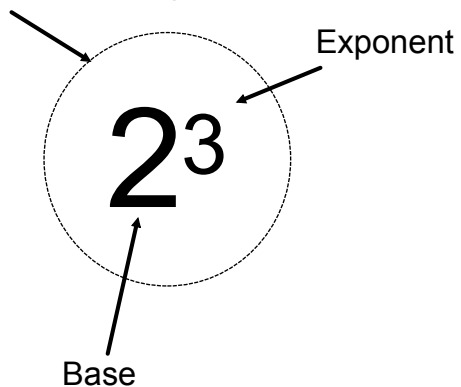
$$5z - 9 = 8z + 15$$

Sep 5-2:51 PM

## Exponents and Exponent Rules

### Terminology

Power (the whole package)



Feb 23-9:05 AM

Standard Form      and      Expanded Form

$$2^3$$

$$2 \times 2 \times 2$$

$$5^4$$

$$5 \times 5 \times 5 \times 5$$

$$(-3)^2$$

$$(-3) \times (-3)$$

$$(a+5)^3$$

$$(a+5) \times (a+5) \times (a+5)$$

Feb 23-9:08 AM

### Basic Exponent Rules

$$3^4 \times 3^5$$

$$a^m \times a^n = a^{m+n}$$

$$\frac{2^5}{2^3}$$

$$\frac{a^m}{a^n} = a^{m-n}$$

$$(2^3)^2$$

$$(a^m)^n = a^{mn}$$

$$\left(\frac{3}{2}\right)^3$$

$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$$

Sep 5-2:07 PM

Mixed Term Operations

Simplify

$$(2^3)(a^5)(2^4)(a^3)$$

Note:

Feb 23-9:32 AM

Simplify

$$\frac{5^4 a^6 b^8}{5^2 a^4 b^7}$$

=

Feb 23-9:37 AM

## The ZERO Exponent Rule

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

$$\frac{27}{27} = 1 \longrightarrow \frac{27}{27} = 3^0$$

$$a^0 = 1$$

Feb 23-9:50 PM

## The NEGATIVE Exponent Rule

By patterning....

$$2^4 =$$

$$2^3 =$$

$$2^2 =$$

$$2^1 =$$

$$2^0 =$$

$$2^{-1} =$$

$$2^{-2} =$$

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

Feb 23-9:45 PM

Task - Due tomorrow

Sep 5-2:55 PM