

1.10.17

Exponent Properties

Warm-up

Simplify if possible

1) $x^2 + x^3 =$

2) $x^2 \cdot x^3 =$

3) $x^3 - x^2 =$

4) $\frac{x^3}{x^2} =$

5) $x^0 =$

6) $(x^2)^3 =$

7) $x^{-4} =$

8) $3x^{-4} =$

Same Base:

$$x^A \cdot x^B = x^{A+B}$$

I do:

$$x^3 \cdot x^5 =$$

We do:

$$x^5 \cdot x^4 =$$

With coefficients

$$sx^a \cdot cx^b = (sc)(x^{a+b})$$

I do:

$$3x^2 \cdot 4x^3 =$$

We do:

$$-2^2x^5y \cdot 2^3x^4y =$$

You do on whiteboards:

Left Talk, Right Write

$$-3x^3y \cdot 4x^5y^3 =$$

$$2x^2y^3 \cdot 3x^4y^7 =$$

Negative exponents.

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

$$x^{-b}y^a = \frac{y^a}{x^b} =$$

I do:

$$4x^{-3} =$$

$$2^{-3}x^3y^{-1} =$$

We do:

$$3x^2y^{-3} =$$

$$3x^{-3}y^2 \cdot 2^{-1}x^2y^3 =$$

You do with your partner:

$$2^{-2}x^3y^{-2} \cdot 2^{-3}x^{-2}y^3 =$$

$$3x^3 \cdot -2^{-1}x^2y^{-3} =$$

Division of exponents

$$\frac{x^a}{x^b} = x^{a-b}$$

I do:

$$\frac{6yx^3}{4y^2x} =$$

We do:

$$\frac{15x^3y^5}{3x^3y^2} =$$

Exponent of Exponents:

$$(cx^a)^b = c^b x^{ab}$$

I do:

$$(2x^3)^4 =$$

$$(3^2 x^4)^3 =$$

We do:

$$(2x^3 \cdot 4x^4)^2 =$$

You do:

$$(2x^{-3} \cdot 3x^4)^2 =$$