

Simplifying Exponential Expressions Review

Multiplying Exponential Expressions

$$3^2 \cdot 3^4$$
$$3^6$$

$$y^4 \cdot y^{10}$$
$$y^{14}$$

$$12^3 \cdot 12^5$$
$$12^8$$

SUMMARY: $a^m \cdot a^n = a^{m+n}$

Dividing Exponential Expressions

$$\frac{3^6}{3^2}$$

3^4

$$\frac{y^{10}}{y^4}$$

y^6

$$\frac{12^5}{12^3}$$

12^2

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

Negative Exponents

$$\frac{3^2}{3^6} = 3^{-4} = \frac{1}{3^4}$$

$$\frac{y^4}{y^{10}} = y^{-6} = \frac{1}{y^6}$$

$$\frac{12^3}{12^5} = 12^{-2} = \frac{1}{12^2}$$

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

Exponential Expressions Raised to a Power

$$(3^6)^2$$
$$3^{12}$$

$$(y^3)^4$$
$$y^{12}$$

$$(12m)^5$$
$$12^5 m^5$$

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

SUMMARY: $(a \cdot b)^n = a^n \cdot b^n$

Classwork

Choose 2 from each set of #'s

- #1-5 and #19-23

Choose 3 from each set of #'s

- #6-18 and #24-30