

Warm - Up Nov. 28th

Simplify

$$(x^3 y^4)^5$$

pow. of product

$$(x^{3 \times 5} y^{4 \times 5}) = x^{15} y^{20}$$

Exponent of 0

An Exponent of 0

English: Any non-zero base, with an exponent of 0, is equal to 1.

Example: $x^0 = 1$ ($x \neq 0$)

P.57

Simplify

$$y^{-4} \times y^4$$

$$y^0 = 1$$

Simplify

$$\frac{(w^2 \times w^4)}{w^6}$$

$$= \frac{\cancel{w^6}}{\cancel{w^6}} = w^{6-6} = w^0 = 1$$

Simplify

$$-k^0 + (+k)^0$$

$$-k^0 + k^0 =$$

$$-1 + 1 = 0$$

The Idea of a Negative Exponent

For all real numbers x ($x \neq 0$) and real number constant m .

$$\left(\frac{x}{1}\right)^{-m} = \frac{1}{x^m} \text{ and } \frac{1}{x^{-m}} = x^m$$

$$\left(\frac{x}{1}\right)^{-m} = \left(\frac{1}{x}\right)^m \quad \frac{m^4}{m^6} = m^{-2} = \frac{1}{m^2}$$



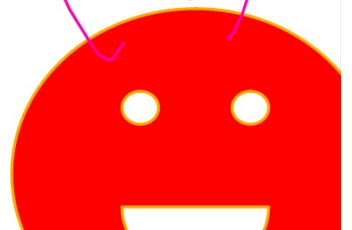
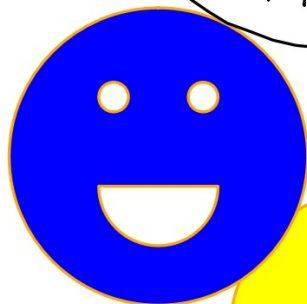
$$(x^{-5})^3$$
$$x^{-15} = \frac{1}{x^{15}}$$

$$-2h^{-3}$$
$$-2 \cdot \frac{1}{h^3}$$

$$\frac{-2}{h^3}$$

$$\left(\frac{1}{z^2}\right)^{-4}$$
$$\frac{(1)^{-4}}{(z^2)^{-4}} = \frac{1^{-4}}{z^{-8}}$$

$$\frac{z^8}{1} = z^8$$



Assignment (due Fri)

p.58

(#1,2,5,19,21,22,26,30,31)

**Now that you've seen all properties in action,
problems 1 - 32 from p. 58 have been assigned!**

