Zero and Negative Exponents

Section 8.2

Exponents

- Any # or variable with exponent of 0 is equal to 1.
- Negative exponents
  - If the negative exponent is on the top of the fraction, move it to the bottom and make it a positive exponent
  - If the negative exponent is on the bottom of the fraction, move it to the top and make it a positive exponent

$2^4 = 16$
$2^3 = 8$
$2^2 = 4$
$2^1 = 2$
$2^0 = 1$

EXAMPLES

1.) $3^{-2} = \frac{1}{3^2} = \boxed{\frac{1}{9}}$

2.) $\frac{1}{5^{-4}} = 5^4 = \boxed{625}$

3.) $x^{-5} \cdot y = \boxed{\frac{y}{x^5}}$

4.) $\frac{1}{x^{-2}y} = \boxed{\frac{x^2}{y}}$

$\frac{1}{-3}$

AND MORE

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

6.) $6x^{-4} = \frac{6}{x^4}$

7.) $-6x^{-5} = \frac{-6}{x^5}$

8.) $(xy^2)^{-3} = x^{-3}y^{-6} = \frac{1}{x^3y^6}$

9.) $\frac{x^{-2}y^3}{z^{-4}} = \frac{y^3z^4}{x^2}$

CLASSWORK

- PG 459 # 14-44 even
- wkst 8.2A # 4-24

(16) $\left(\frac{1}{5}\right)^{-1} = \frac{1^{-1}}{5^{-1}} = \frac{5^1}{1^1} = \boxed{5}$

(23) $\frac{8^3}{0^1} = \frac{512}{0} = U$

(24) $\frac{8^7}{8^7} = 1$

HOMEWORK

- Pg 459 # 15-45 odd