

8.3: Zero and Negative Exponents

“I WILL ...

Apply rules of Exponents from the Zero and Negative Property.”

I. Zero Exponents

A. $a^0 = 1$

B. Any base raised to the zero power will equal to one.

II. Negative Exponents

A. _____ NEGATIVE EXPONENTS

B. _____ means move the base to the opposite side and switch the exponent to positive from negative

III. Model Problems

| | |
|------------------------------------|--|
| Ex 1: Solve $\frac{8^4}{8^4}$ | Ex 2: Solve $\left(\frac{2}{3}\right)^0$ |
| Ex 3: Solve, $(0)^1$ | Your Turn: Solve -3^0 (Remember your order of operations) |
| Ex 4: Solve 3^{-2} | Ex 5: Simplify $(3x)^{-2}$ |
| Ex 6: Simplify, $\frac{1}{2^{-3}}$ | Your Turn: Simplify, $3x^{-2}$ |

| | |
|--|---|
| Ex 7: Solve, $(-8)^{-2}$ | Ex 8: Solve, $(1/5)^{-2}$ |
| Ex 9: Simplify, $\frac{x^{-3}}{5}$ | Your Turn: Simplify, $\frac{4x^{-3}}{5}$ |
| Ex 10: Solve, $6^{-4} \cdot 6^4$ | Ex 11: Solve, $(4^{-2})^2$ |
| Your Turn: Solve, $\frac{5^{-1}}{5^2}$ | Your Turn: Solve, $\frac{5^{-1}}{5^{-2}}$ |