

— NEGATIVE EXPONENTS AND ZERO EXPONENTS —

The **Negative Exponent Property** helps you simplify expressions that have negative exponents. It states that you can write a power with a negative exponent as a fraction with 1 in the numerator and a positive exponent in the denominator.

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

Let's try it! Simplify 8^{-3} using the Negative Exponent Property.

$$8^{-3} = \frac{1}{8^3}$$

The **Zero Exponent Property** helps you simplify expressions that have a nonzero base raised to the zero power. It states that any nonzero base raised to the zero power is 1.

$$x^0 = 1$$

Let's try it! Simplify 7^0 using the Zero Exponent Property.

$$7^0 = 1$$

Try it yourself! Use the properties above to simplify each expression.

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

$$2^0 = 1$$

$$6^{-5} = \frac{1}{6^5}$$

$$4^0 = 1$$

$$13^0 = 1$$

$$9^{-3} = \frac{1}{9^3}$$

$$12^{-7} = \frac{1}{12^7}$$

$$1^0 = 1$$

$$22^0 = 1$$

$$19^{-6} = \frac{1}{19^6}$$

$$13^{-2} = \frac{1}{13^2}$$

$$250^0 = 1$$

$$0.8^0 = 1$$

$$20^{-1} = \frac{1}{20^1}$$

$$1.6^0 = 1$$

$$5^{-8} = \frac{1}{5^8}$$

$$\left(\frac{12}{7}\right)^0 = 1$$

$$77^{-9} = \frac{1}{77^9}$$