

SOLVING EXPONENTIAL EQUATIONS

Frequency: ★

Common Exponential Values

$2^0 =$ _____	$3^0 =$ _____	$4^0 =$ _____	$5^0 =$ _____	$6^0 =$ _____	$7^0 =$ _____	$8^0 =$ _____	$9^0 =$ _____
$2^1 =$ _____	$3^1 =$ _____	$4^1 =$ _____	$5^1 =$ _____	$6^1 =$ _____	$7^1 =$ _____	$8^1 =$ _____	$9^1 =$ _____
$2^2 =$ _____	$3^2 =$ _____	$4^2 =$ _____	$5^2 =$ _____	$6^2 =$ _____	$7^2 =$ _____	$8^2 =$ _____	$9^2 =$ _____
$2^3 =$ _____	$3^3 =$ _____	$4^3 =$ _____	$5^3 =$ _____	$6^3 =$ _____	$7^3 =$ _____		
$2^4 =$ _____	$3^4 =$ _____	$4^4 =$ _____	$5^4 =$ _____				
$2^5 =$ _____	$3^5 =$ _____						
$2^6 =$ _____							

Negative Exponents

You can rewrite exponential expressions with negative exponents by moving them across the fraction line:

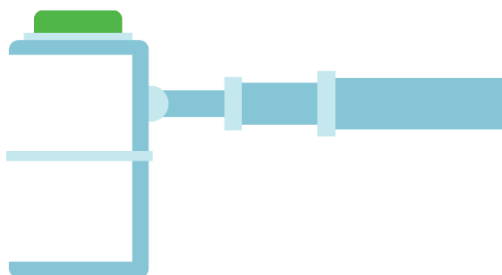
$$8^{-3} = \underline{\hspace{2cm}} \quad \text{and} \quad \frac{1}{8^{-3}} = \underline{\hspace{2cm}}$$

The tricky part is recognizing when to use these properties.

I. Reducing to the Same Base

Solve for x .

$$3^{5x-2} = 27$$



Solve for x .

$$5^{2x} = 1/25$$

II. Setting the Exponent Equal to 0

When an exponential equation equals 1, you know the exponent must equal 0.

Solve for x . $5^{3x-6} = 1$