



Cornell Notes 	Topic/Objective: 4.2 Solving Exponential Equations	Name:
		Class/Period: 4th
		Date: 1/31/17

Essential Question: How do you solve exponential equations

Questions:	Notes:
	GENERAL FORM OF FUNCTION:
	$f(x) = a^x$ $f(x) = \frac{1}{a^x}$ $a \in \mathbb{R}^+, a \neq 1$ or $f(x) = a^{-x}$
	EXPONENTIAL GROWTH DECAY
	<u>EXPONENTIAL EQUATIONS:</u>
	ANY EQUATION IN WHICH THE UNKNOWN IS AN EXPONENT.
	EX) $5^x = 25$ $x = 2$
	IF THE BASE IS THE SAME ON BOTH SIDES OF $=$, I CAN SET THE EXPONENTS EQUAL TO EACH OTHER AND SOLVE.
	$5^x = 5^2 \implies x = 2$
	EX) SOLVE $3^{x-1} = 3^{5x}$
	$x-1 = 5x$
	$-1 = 4x$
	$-\frac{1}{4} = x$
	You do: $3^{3x+1} = 3^4$
	$3x+1 = 4$
	$3x = 3$
	$x = 1$

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	$\text{Ex)} \quad 5^{3x} = 25^{x-2}$
	$5^{3x} = (5^2)^{x-2}$
	$5^{3x} = 5^{2(x-2)}$
	$3x = 2(x-2)$
	$3x = 2x - 4$
	$x = -4$
	$\text{Ex)} \quad \frac{3x^{-\frac{3}{5}}}{3} = \frac{24}{3}$
	$x^{-\frac{3}{5}} = 8$
	$\left(x^{-\frac{3}{5}}\right)^{-\frac{5}{3}} = (8)^{-\frac{5}{3}}$
	$x = \frac{1}{(\sqrt[3]{8})^5}$
	$x = \frac{1}{32}$
	4D p.108 1,2,3
	4E p.109 1ade
	2qde
	3all