

Topic: Exponent Rules ✓

10/2/17

EQ: How can we use exponent rules to simplify complex math problems in Algebra? ✓

Name	Rule	Examples
Exponents	base $2^3 = 2 \cdot 2 \cdot 2$ <small>exponent</small>	$a^4 = a \cdot a \cdot a \cdot a$ a is the base, 4 is the exponent
Multiply → Product Rule	$a^m \cdot a^n = a^{m+n}$	$3^2 \cdot 3^4 = 3^{2+4} = 3^6$
Divide → Quotient Rule	$\frac{a^m}{a^n} = a^{m-n}$	$\frac{4^8}{4^3} = 4^{8-3} = 4^5$
Power Rule <small>(power to a power)</small>	$(a^m)^n = a^{m \cdot n}$	$(5^2)^4 = 5^{2 \cdot 4} = 5^8$
Negative Exponent	$a^{-m} = \frac{1}{a^m}$	$2^{-3} = \frac{1}{2^3} = \frac{1}{8}$ $3^{-2} = \frac{1}{3^2} = \frac{1}{9}$
Zero Exponent	$a^0 = 1$	$2^0 = 1$, $10,000^0 = 1$, $-4^0 = 1$
How do you do exponents?	$-3^2 = -9$ $-1 \cdot 3^2$ $(-3)^2 = 9$ $3 \cdot -3 =$	
When using product rule do you multiply or divide?		
How can you tell if your answer is 1 in for problem?		
		Summary: we can use exponent rules to simplify complex math problems in algebra by knowing whether to divide, multiply, add or subtract the exponents or the problem.