

## Zero Exponent Law

I'll compare the products written as *powers* and in *standard form*.

- How would I explain or describe the patterns of increasing values?

$$3^4 = 81$$

$$3^3 = 27$$

$$3^2 = 9$$

$$3^1 = 3$$

- Following the pattern of increasing values, how would I explain the next product?

- How would I explain or describe the patterns of decreasing values?

$$3^4 = 81$$

$$3^3 = 27$$

$$3^2 = 9$$

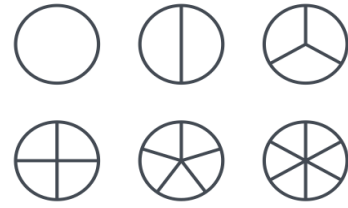
$$3^1 = 3$$

- Following the pattern of decreasing values, how would I explain the next product?



$2ab + 6k$   
 $2ab + 6k$

- How would I use the diagrams to explain when a fraction is equal to 1?

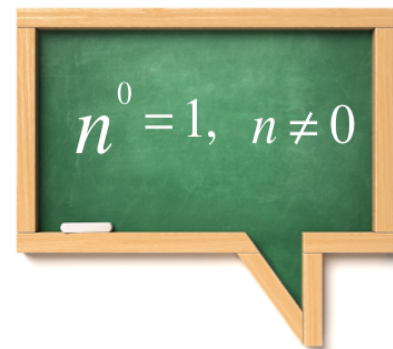


*A fraction that has the same numerator and denominator is equal to one.*

- How could I apply the same reasoning to verify the expression below must also be equal to one?

$$\frac{3^4}{3^4}$$

*The Zero Exponent Law states...  
A power with an integer base, other than 0,  
and an exponent 0 is equal to 1.*



- How would simplifying the expression allow me to verify the expression is equal to one?

$$3^4 \div 3^4$$

- How would evaluating the expression using the Order of Operations allow me to verify the expression is equal to one?

$$3^4 \div 3^4$$

# Zero Exponent Law

Which statements do I feel confident explaining and demonstrating?

Which statements do I not feel confident explaining and demonstrating?

- ✓ I can explain and write examples of fractions equal to one
- ✓ I can state the Zero Exponent Law
- ✓ I can verify the Zero Exponent Law using my knowledge of fractions equal to one  $\frac{3^4}{3^4}$
- ✓ I can verify the Zero Exponent Law using the Quotient of Powers Law to simplify an expression  $3^4 \div 3^4$
- ✓ I can verify the Zero Exponent Law using the Order of Operations to evaluate an expression  $3^4 \div 3^4$

$$2ab + 6k$$

