Zero and Negative Exponent Exploration Name:

1. Use the definition for exponents and exploring patterns to fill in the missing values.

$2^4 =$ ___	$3^4 =$ ___	$4^{-} = 256$
$2^3 =$ ___	$3^3 =$ ___	$4^3 =$ ___
$2^2 =$ ___	$3^2 =$ ___	$4^2 =$ ___
$2^1 =$ ___	$3^1 =$ ___	$4^1 =$ ___
$2^0 =$ ___	$3^0 =$ ___	$4^0 =$ ___
$2^{-1} =$ ___	$3^{-1} =$ ___	$4^{-1} =$ ___
$2^{-2} =$ ___	$3^{-2} =$ ___	$4^{-2} =$ ___
$2^{-3} =$ ___	$3^{-3} =$ ___	$4^{-3} =$ ___

2. Finish the sentence describing the two patterns that can be found above.

A number raised to the zero power is always equal to _____.

A whole number raised to a negative exponent is always _____.