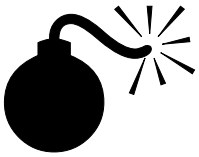

The Power of 0 and 1

Name_____

Make a prediction about which expression will have the **least** value by circling one of the three expressions given. Then use the calculator to check your prediction.

1. 0^1 1^0 1^1
2. 4^1 0^4 4^0
3. 5^1 5^0 1^5
4. 8^1 1^8 8^0
5. 10^0 1^{10} 10^1

Using your calculator, find the value for the expressions with base 3 and those with base 2. Pay attention to the pattern as the exponent decreases.

$3^5 = 729$, $729 \div 3 =$ ___
$3^4 = 243$, $243 \div 3 =$ ___
$3^3 = 81$, $81 \div 3 =$ ___
$3^2 = 27$, $27 \div 3 =$ ___
$3^1 = 9$, $9 \div 3 =$ ___
$3^0 = 3$, $3 \div 3 =$ ___

$2^6 = 128$, $128 \div 2 =$ ___
$2^5 = 64$, $64 \div 2 =$ ___
$2^4 = 32$, $32 \div 2 =$ ___
$2^3 = 16$, $16 \div 2 =$ ___
$2^2 = 8$, $8 \div 2 =$ ___
$2^1 = 4$, $4 \div 2 =$ ___
$2^0 = 2$, $2 \div 2 =$ ___

Use any number as the base to build a pattern of your own

$\_\_^5 =$ ___, _____ ÷ ___ = ___
$\_\_^4 =$ ___, _____ ÷ ___ = ___
$\_\_^3 =$ ___, _____ ÷ ___ = ___
$\_\_^2 =$ ___, _____ ÷ ___ = ___
$\_\_^1 =$ ___, _____ ÷ ___ = ___
$\_\_^0 =$ ___, _____ ÷ ___ = ___

Using the patterns from the problems above, fill in the blanks.

One to any power (1^n) will always _____

The value of n^1 will always _____

The value of n^0 will always _____