



Math Virtual Learning

Algebra 1 S1

May 12 , 2020



Grade/Course
Lesson: [May 12]

Objective/Learning Target:

Students will find equivalent expressions using concepts involving zero and negative exponents.
(May 12 lesson)

Brainstarter





"Remember Take
Notes"

Let's Get Started

[Watch Video 1 Zero Exponent](#)

[Watch Video 2 Negative Exponents](#)

[Video 3 Putting it together](#)

The "Zero" tells us that to raise an integer to the zero power, you get 1!
Seriously! EVERYTIME!

Proof:

$$\frac{5}{5} = 1$$

$$5^1 = 1$$

$$5^1$$

$$5^{1-1} = 1$$

$$5^0 = 1$$



Your First Example



$$n^{\circ} = 1$$

$$(a+b)^{\circ} = 1$$

$$9,999,999^{\circ} = 1$$

This is my
number 1 rule!



Your Second Example



$$5y^{\circ}$$
$$5(1)$$
$$5$$

$$-8a^{\circ}$$
$$-8(1)$$
$$-8$$

Remember without the parentheses the exponent only applies to the variable in these examples.!



Let's try a little harder example...



$$\begin{aligned} &(-2x^0)^3 \\ &(-2(1))^3 \\ &(-2)^3 \\ &(-2)(-2)(-2) \\ &-8 \end{aligned}$$

Be careful when multiplying a negative inside the parentheses!



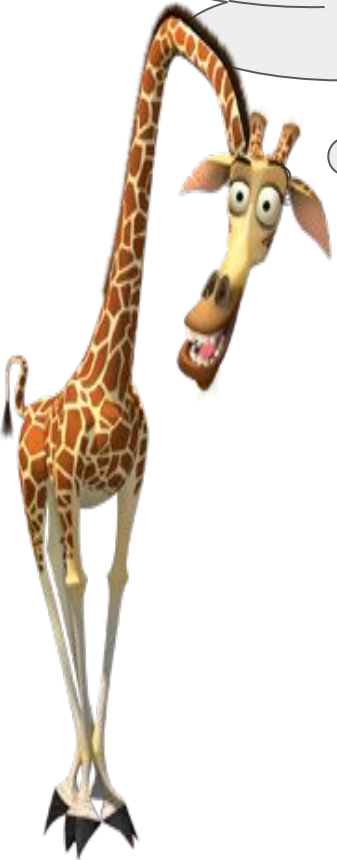
I think you've got it!



$$\begin{aligned}(m+2)^0 - m^0 - 2m^0 \\ 1 - 1 - 2(1) \\ 0 - 2 \\ -2\end{aligned}$$

YIPPEE!






Let's move on to negative exponents! A negative exponent just means that the base is on the wrong side of the fraction line, so you need to flip the base to the other side.

$$6x^2y^{-2}$$

$$\frac{6x^2}{y^2}$$



Only flip the expression with the negative exponent!



Let's try something a little harder!

$$\left(\frac{6x^2y}{2y^2z} \right)^{-2}$$

$$\left(\frac{3x^2}{y^2z} \right)^{-2}$$

$$\left(\frac{y^2z}{3x^2} \right)^2$$

$$\frac{y^4z^2}{9x^4}$$



Reduce inside the
parentheses first! Then
Flip!
Then do your powers!



Now it's your turn!

$$1). 5^{\circ}(3 + z^{\circ})$$

$$3). \frac{p^2 r^{\circ}}{P^{\circ} r^{-3}}$$

$$2). \frac{6x^2}{2x^7}$$

$$4). \frac{(-3n^3 y^2)^3}{(3n^3 y)^{\circ}}$$

Answer Key:

Once you have completed the problems, check your answers here.

1). 4

3). p^2r^3

2). $36y^2x^8$

4). $-27n^9y^6$

Additional Practice:

Finding equivalent expressions using concepts involving zero and negative exponents.

