

7.3 Zero and Negative Exponents

Zero Exponents:

$$a^0 = 1 \text{ ALWAYS}^*$$

*there is 1 exception to this rule...

$0^0 \rightarrow$ DOES NOT EXIST!!!

Oct 17-10:58 AM

Negative Exponents flip
and change to positive.

$$a^{-n} = \frac{1}{a^n}$$

It also works in reverse:

$$\frac{1}{a^{-n}} = a^n$$

Oct 17-11:06 AM

What is the simplified form of the following:

A. 3^{-3}

$$\frac{1}{3^3}$$

$$\frac{1}{27}$$

B. $(-3.5)^0$

$$1$$

C. 4^{-2}

$$\frac{1}{4^2}$$

$$\frac{1}{16}$$

Oct 17-11:09 AM

What is the simplified form of the following:

A. $(7)^0$

$$1$$

B. $(-5)^{-2}$

$$\frac{1}{(-5)^2}$$

$$\frac{1}{25}$$

C. $(-2)^{-3}$

$$\frac{1}{-2^3}$$

$$-\frac{1}{8}$$

Oct 17-11:09 AM

What is the simplified form of the following:

A. x^{-3}

$$\frac{1}{x^3}$$

B. $5b^{-2}$

$$\frac{5}{b^2}$$

C. $\frac{1}{m^{-3}}$

$$m^3$$

Oct 30-1:26 PM

What is the simplified form of the following:

A. g^0

$$1$$

B. $\frac{x^{-3}}{y^5}$

$$\frac{1}{x^3 y^5}$$

C. $\frac{a^{-2}}{b^{-4}}$

$$\frac{b^4}{a^2}$$

Oct 30-1:26 PM

$4c^{-2}b$ $\frac{4b}{c^2}$	$6x^{-2}y^3z$ $\frac{6y^3z}{x^2}$
$\frac{c^{-3}}{d^{-2}}$ $\frac{d^2}{c^3}$	$\frac{b^0}{a^5}$ $\frac{1}{a^5}$

Oct 22-3:08 PM

$b^{-5} \cdot b^3 \cdot b^{-9}$ $b^{-11} = \frac{1}{b^{11}}$	$4z^5 \cdot 9z^{-6}$ $36z^{-1} = \frac{36}{z}$
$2x^3y^4 \cdot 3x^{-4}$ $6x^{-1}y^4 = \frac{6y^4}{x}$	$(r^{-2}st^{-3})(s^4t)$ $r^{-2}s^5t^{-2} = \frac{s^5}{r^2t^2}$

Mar 24-10:48 AM

$(r^2st^3)^{-2}$ $r^{-4}s^{-2}t^{-6}$ $\frac{1}{r^4s^2t^6}$	$(r^2st^3)^{-2}(s^4t)^3$ $(r^{-4}s^{-2}t^{-6})(s^{12}t^3)$ $r^{-4}s^{10}t^{-3}$ $\frac{s^{10}}{r^4t^3}$
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Mar 24-10:56 AM

$\left(\frac{x^3}{8}\right)^{-2}$ $\frac{x^{-6}}{8^{-2}} = \frac{8^2}{x^6} = \frac{64}{x^6}$	$\left(\frac{3x^2y}{4}\right)^{-2}$ $\frac{3^{-2}x^{-4}y^{-2}}{4^{-2}} = \frac{4^2}{3^2x^4y^2} = \frac{16}{9x^4y^2}$
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Mar 24-11:03 AM

$\left(\frac{3}{b^{-3}}\right)^{-3}$ $\frac{3^{-3}}{b^9} = \frac{1}{3^3b^9} = \frac{1}{27b^9}$	$\left(\frac{3y^{-2}}{x^3}\right)^2$ $\frac{3^2y^{-4}}{x^6} = \frac{9}{x^6y^4}$
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Mar 24-10:59 AM

$\frac{21x^5w^3}{9x^2w^{10}}$ $\frac{7x^3w^{-7}}{3} = \frac{7x^3}{3w^7}$	$\frac{5x^{10}z^4w^1}{10x^{20}z^6w^9}$ $\frac{1x^{-10}z^{-2}w^{-8}}{2} = \frac{1}{2x^{10}z^2w^8}$
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Mar 24-11:00 AM

$\frac{3x^6 w^1 z^3}{21x^4 w^2 z^{11}}$ $\frac{1x^2 w^{-1} z^{-8}}{7}$ <div style="border: 1px solid red; padding: 5px; width: fit-content; margin: 5px auto;"> $\frac{x^2}{7wz^8}$ </div>	$\frac{8a^{\frac{1}{2}}b^{-2}}{12a^3b^5}$ $\frac{2a^{-5/2}b^{-7}}{3}$ <div style="border: 1px solid red; padding: 5px; width: fit-content; margin: 5px auto;"> $\frac{2}{3a^{5/2}b^7}$ </div>
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Mar 24-11:02 AM

Classwork: p.452 #4 - 44 even
Copy the question!

Final Five

Simplify each expression.

a) 2^3 b) 2^{-3} c) $(-2)^3$

Oct 30-1:28 PM