DIVIDING MONOMIALS

The opposite of division is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. And when multiplying monomials, the rule tells

says to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the coefficients and \_\_\_\_\_\_\_\_ the exponents.

Because division and multiplication are opposites, when dividing monomials, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

the coefficients and \_\_\_\_\_\_\_\_ the exponents.

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| NUMBERS |  VARIABLES | PRODUCT OF NUMBERS AND VARIABLES |
| $\frac{18}{3}$ = \_\_\_\_\_\_\_ | $$\frac{x^{5}}{x^{3}}$$What part of the rule should be applied? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$\frac{x^{5}}{x^{3}}$ = ($x^{\\_\\_\\_\\_\\_\\_\\_-\\_\\_\\_\\_\\_\\_\\_}$ ) = $x^{\\_\\_\\_\\_\\_\\_}$ | $\frac{6x^{9}y^{2}}{3x^{4}y}$What part(s) of the rule should be applied? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$6÷3 $= \_\_\_\_= $\frac{\\_\\_\\_x^{9}y^{2}}{x^{4}y}$= $\\_\\_\\_\\_x^{\\_\\_\\_-\\_\\_\\_}y^{\\_\\_\\_\\_-\\_\\_\\_\\_}$ = $\\_\\_\\_x^{\\_\\_\\_\\_}y^{\\_\\_\\_\\_}$  |
| Sometimes, reducing is easier than dividing.$\frac{6}{24}$ = \_\_\_\_\_\_\_ | $$\frac{a^{4}b^{7}}{a^{2}b}$$What part of the rule should be applied? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_= $a^{\\_\\_\\_\\_\\_\\_\\_-\\_\\_\\_\\_\\_\\_\\_}b^{\\_\\_\\_\\_\\_\\_\\_-\\_\\_\\_\\_\\_\\_\\_}$ = $a^{\\_\\_\\_\\_\\_\\_}b^{\\_\\_\\_\\_\\_\\_}$ | $$\frac{4x^{5}}{6x^{2}}$$What part of the rule should be applied? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$\frac{4}{6}$ = \_\_\_\_\_\_$=\frac{}{}x^{\\_\\_\\_-\\_\\_\\_\\_}$ **=**  |

NEGATIVE RULE

When simplifying monomials, the value of an exponent can NEVER be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

After simplifying, ONLY take the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of each \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that has a \_\_\_\_\_\_\_\_\_\_\_\_\_\_

exponent. This will turn \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ exponents \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

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| $$a^{-2}$$ | $$\frac{1}{a^{-2}}$$ |
| Turn the term into a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. If it is already in that format, move to the next step.= \_\_\_\_\_\_\_\_\_\_\_\_To find the reciprocal, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_= \_\_\_\_\_\_\_\_\_\_\_\_ | If the negative term is in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ find it’s reciprocal by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Again when changing a negative to the other side of the fraction, this makes the negative exponent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.= \_\_\_\_\_\_\_\_\_\_\_\_ |
| $$\frac{x^{2}}{x^{13}}$$How do you simplify this monomial? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$$= x^{\\_\\_\\_\\_\\_-\\_\\_\\_\\_\\_\\_}$$$$=x^{\\_\\_\\_\\_\\_\\_\\_}$$ | $$\frac{12x^{2}}{15x^{-5}}$$1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_$$\frac{12}{15}= $$2) Change any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_3) What operation is done next? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

ZERO RULE

When simplifying monomials, if the exponent of a term simplifies to equal zero, the value of that term

simplifies to \_\_\_\_\_\_.

Simplify each monomial.

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| $$\frac{-8x^{6}y^{2}}{2x^{3}y^{2}}$$ | $$\frac{-9x^{8}}{-6x^{2}y^{6}}$$ |
|  |  |

DIVIDING POLYNOMIALS

Dividing polynomials in the same manner you divide monomials. However, simplify each \_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Simplify $\frac{15a^{5}+3a^{3}}{3a}$

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Simplify $\frac{12x^{3}y^{2}-6x^{2}y^{3}+4y}{2y}$