Name_____Period_____

Review 8.1-8.3

Algebra 1 Homework

Remember the Shortcuts:

$$x^{0} \cdot x^{0} = X^{a+b}$$

APPLY IT! \Rightarrow

Simplify:
$$(G^{C}H^{5}) = G^{5} + G$$

$$(x^a)^b = \underline{\qquad \qquad }$$

 $\mathsf{APPLY}\,\mathsf{IT!}\Rightarrow$

Simplify:
$$(G^4)^2 \bullet (G^3)^3 = G^7$$

$$(xy)^b = X^b y^7$$

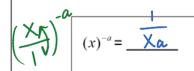
APPLY IT! \Rightarrow

Simplify:
$$(2m^2n)^3 = 2^3 \text{ m}^6 \text{ n}^3 = 8m^6n^3$$

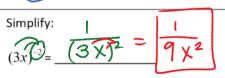
$$(x)^0 =$$

APPLY IT! \Rightarrow

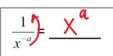
Simplify:
$$\left(\frac{2p^3q^5}{7pq^8}\right)^0 = \frac{1}{2p^8}$$



APPLY IT! ⇒



1/a



APPLY IT! ⇒

Simplify:
$$5Wj^2W^3 = 5j^2W^4$$

IF YOU SEE A NEGATIVE EXPONENT, FIRST STEP SHOULD BE...

CROSS THE LINE AND CHANGE THE SIGN!

Example: Simplify the following:

$$\left(\frac{4^{-1}p^{-4}r^{2}}{2^{-3}p^{-2}r^{-3}}\right) = \frac{2^{3}p^{2}r^{2}r^{3}}{4^{1}p^{4}} = \frac{9p^{2}r^{5}}{4p^{4}} = \frac{2r^{5}}{2r^{5}}$$

FIND THE MISTAKE!! There is an error in each of the 4 simplifying problems. Find it, explain it, and correct it. Write the correct simplified expression.

$$1) (3x^2y^3)^{2}(7xy^2) = (3x^4y^6)(7xy^2) = 21x^5y^8$$

Mistake: didn't square the 3

Correction:
$$(3^{2} \times ^{4} y^{6})(7 \times y^{2}) = 63 \times ^{5} y^{8}$$

3)
$$\left(-3a^2bc^3\right)^3 = 27a^6b^3c^9$$

Mistake: forgot the negative

Correction:
$$(-3)^3 a^6 b^3 c^9 = -279^6 b^3 c^9$$

2)
$$\left(\frac{Ax^{0}y^{-2}}{A}\right)^{2} = \left(\frac{x}{y^{2}}\right)^{2} = \frac{x^{2}}{y^{4}}$$

Mistake: added exponents instead ot

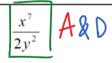
Correction:
$$(x^{\circ}y^{-2})^2 = x^{\circ}y^{-4} = \frac{1}{y^4}$$

$$4) \qquad \left(\frac{5v^{-2}}{w^2}\right) \qquad = \qquad \left(\frac{1}{5v^2w^2}\right)$$

Mistake: Switched the 5 to the denom. when they didn't have to

Correction: $\frac{5}{\sqrt{2}W^2}$

Circle the following statements equivalent to



a)
$$\left(\frac{2x^{-3}y^2}{x^4y^0}\right)^{-1}$$
 b) $\left(\frac{x \cdot x^7}{2y^2}\right)$ c) $\left(\frac{x}{2y}\right)^{-1}$ b) $\left(\frac{x \cdot x^7}{2y^2}\right)$

$$\begin{pmatrix} y^2 \\ x^4 \end{pmatrix} = \begin{pmatrix} x^7 \\ 2y^2 \end{pmatrix}$$

$$\sqrt{x} \left(\frac{x}{2y} \right)^{2} (x^{5})$$

$$\left(\frac{x}{2y}\right)(x^{5}) \qquad \text{di}\left(\frac{3x^{9}}{6x^{2}}\right) \\
\left(\frac{\chi^{2}}{4y^{2}}\right)\left(\frac{\chi^{5}}{1}\right) = \frac{\chi^{7}}{4y^{2}}$$

Simplify the following:

1)
$$\left(\frac{w^2k^{-3}}{3w^3k}\right)^2 = \left(\frac{1}{3wk^4}\right)^2$$

$$= \left(\frac{1}{9w^2k^8}\right)$$

2)
$$(2b^{2}c)^{3} \cdot (4b^{3}c)$$

 $(8b^{6}c^{3}) \cdot (4b^{3}c)$
 $\boxed{32b^{9}c^{4}}$

3)
$$h^2 \cdot h^0 \cdot h^{-4}$$

 $h^2 \cdot 1 \cdot \frac{1}{14} = \frac{h^2}{14} = \frac{1}{14}$

$$\underbrace{(12x^{3}y^{-3})^{-2}}_{(3x^{-2}y^{4})^{-3}} = \underbrace{(3x^{-2}y^{4})^{-3}}_{(12x^{3}y^{-3})^{-2}} = \underbrace{(3x^{-2}y^{4})^{-3}}_{(12x^{3}y^{-3})^{-2}}_{(12x^{3}y^{-3})^{-2}} = \underbrace{(3x^{-2}y^{4})^{-3}}_{(12x^{3}y^{-3})^{-2}}_{(12x^{3}y^{-3})^{-2}}_{(12x^{3}y^{-3})^{-2}}_{(12x^{3}y^{-3})^{-2}}_{(12x^{3}y^{-3})^{-2}}_{(12x^{3}y$$

3)
$$h^{2} \cdot h^{0} \cdot h^{-4}$$

$$h^{2} \cdot 1 \cdot \frac{1}{h^{4}} = \frac{h^{2}}{h^{4}} = \boxed{\frac{1}{h^{2}}}$$

$$4) \int_{(3x^{-2}y^{4})^{-3}}^{(12x^{3}y^{-3})^{-2}} = \underbrace{(3x^{-2}y^{4})^{-3}}_{(12x^{3}y^{-3})^{2}} = \underbrace{(3x^{-2}y^{4})^{-3}}_{(12x^{3}y^{-3})^{2}} = \underbrace{3^{3}x^{-6}y^{2}}_{(12x^{3}y^{-6})^{-6}} = \underbrace{\frac{27y^{18}}{144}x^{12}}_{(12x^{3}y^{-6})^{-6}} = \underbrace{\frac{3y^{18}}{144}x^{12}}_{(12x^{3}y^{-6})^{-6}} = \underbrace{\frac{3y^{18}}{144}x^{12}}_{(12x^{3}y^{-6})^{-6}}}_{(12x^{3}y^{-6})^{-6}} = \underbrace{\frac{3y^{18}}{144}x^{12}}_{($$