Day 2 – Review of Dividing Powers – Notes

Original	Expanded Form	Simplified Form	Rule
$\frac{x^5}{x^2}$	$\frac{x \cdot x \cdot x \cdot x \cdot x}{x \cdot x}$	x^3	*Dividing Powers* $\frac{x^m}{x^n} = x^{m-n}$
$\frac{x^7}{x^4}$	$\frac{x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x}{x \cdot x \cdot x \cdot x}$	x^3	
$\frac{2x^4}{4x}$	$\frac{2 \cdot x \cdot x \cdot x \cdot x}{2 \cdot 2 \cdot x}$	$\frac{x^3}{2}$	
$\frac{6x^3}{2x^2}$	$\frac{2 \cdot 3 \cdot x \cdot x \cdot x}{2 \cdot x \cdot x}$	$3x$	

Original	Expanded Form	Simplified Form	Rule
$\left(\frac{2}{3}\right)^4$	$\frac{2}{3} \cdot \frac{2}{3} \cdot \frac{2}{3} \cdot \frac{2}{3}$	$\frac{16}{81}$	*Raising a Quotient to a Power* $\left(\frac{x}{y}\right)^m = \frac{x^m}{y^m}$
$\left(\frac{x}{y}\right)^3$	$\frac{x}{y} \cdot \frac{x}{y} \cdot \frac{x}{y}$	$\frac{x^3}{y^3}$	
$\left(\frac{2x}{y^4}\right)^2$	$\frac{2x}{y^4} \cdot \frac{2x}{y^4} = \frac{4x^2}{y^8}$	$\frac{4x^2}{y^8}$	
$\left(\frac{-2x}{y^2}\right)^3$	$\frac{-2x}{y^2} \cdot \frac{-2x}{y^2} \cdot \frac{-2x}{y^2}$	$\frac{-8x^3}{y^6}$	

Original	Expanded Form	Simplified Form	Rule
$\frac{x^3}{x^3}$	$\frac{x \cdot x \cdot x}{x \cdot x \cdot x}$	1	*Zero Power* $\frac{x^m}{x^m} = x^{m-m} = x^0$ $x^0 = 1$
$\frac{2^4}{2^4}$	$\frac{2 \cdot 2 \cdot 2 \cdot 2}{2 \cdot 2 \cdot 2 \cdot 2}$	1	
$\frac{x^2}{x^2}$	$\frac{x \cdot x}{x \cdot x}$	1	
$\frac{z^5}{z^5}$	$\frac{z \cdot z \cdot z \cdot z \cdot z}{z \cdot z \cdot z \cdot z \cdot z}$	1	