

March 28, 2016

$$\begin{aligned}
 & (3x-2)^4 \\
 &= [(3x-2)(3x-2)](3x-2)(3x-2) \\
 &= 9x^2 - 6x - 6x + 4 \text{ collect like terms} \\
 &= (9x^2 - 12x + 4)(3x-2) \\
 &= 27x^3 - 18x^2 - 36x^2 + 24x + 12x - 8 \text{ collect} \\
 &= (27x^3 - 54x^2 + 36x - 8)(3x-2) \\
 &= 81x^4 - 54x^3 - 162x^3 + 108x^2 + 108x^2 - 72x \\
 &\quad - 24x + 16 \text{ collect} \\
 &= 81x^4 - 216x^3 + 216x^2 - 96x + 16
 \end{aligned}$$

Mar 28-9:02 AM

Due tomorrow

$$(-5x+6)^5$$

Mar 28-9:15 AM

Exam #2 - Wednesday  
 2.5, 3.1, 5.1, 5.2, 5.4,  
 5.5, 5.6

Mar 28-9:16 AM

5.5  
 \*\*\*)  $a^m \cdot a^n = a^{m+n}$   
 $a^2 \cdot a^3 = a^{2+3} = a^5$

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

$$\frac{a^4}{a^2} = a^{4-2} = a^2$$

$$(a^m)^n = a^{m \cdot n}$$

$$(a^2)^3 = a^{2 \cdot 3} = a^6$$

$$(ab)^m = a^m \cdot b^m$$

$$(ab)^3 = a^3 \cdot b^3$$

$$(5x^2)^3 = 5x^2 \cdot 5x^2 \cdot 5x^2$$

= 5<sup>3</sup> · (x<sup>2</sup>)<sup>3</sup>

= 125x<sup>6</sup>

$$\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$$

$$\left(\frac{5}{x^2}\right)^3 = \frac{5^3}{(x^2)^3} = \frac{125}{x^6}$$

Mar 28-9:20 AM

$$\begin{aligned}
 (-2y)^3 &= (-2)^3 \cdot (y^1)^3 \\
 &= (-2) \cdot (-2) \cdot (-2) \cdot y \cdot y \cdot y \\
 &= -8y^3 \\
 (4^3)^2 &= (64)^2 = 4096 \\
 &= 4^6 = 4096
 \end{aligned}$$

Mar 28-9:27 AM

$$\begin{aligned}
 \frac{(4x^2y^3)^3}{4xy^8} &= \frac{4^3 \cdot (x^2)^3 \cdot (y^3)^3}{4xy^8} \\
 \frac{64}{4} &= \frac{4^3}{4^1} &= \frac{64x^6y^9}{4^1x^1y^8} \\
 &= 4^{3-1} = 4^2 &= 16x^{6-1}y^{9-8} \\
 &= 4^2 &= 16x^5y \\
 &= 16 &
 \end{aligned}$$

Mar 28-9:31 AM

$$\frac{(5x^3y^{10})^0}{x^{20}} = \frac{1}{x^{20}}$$

Mar 28-9:42 AM

$$\begin{array}{r} x^{-8} y^5 z^6 \\ \hline 2^{-4} x^{-10} y^{-5} z^2 \\ \hline 2^4 \boxed{x^{10}} y^5 y^5 \boxed{z^4} \\ \hline \boxed{x^8} \quad \boxed{z^2} \end{array} \quad \text{Neg. Exp Rule}$$

$$\boxed{16 x^2 y^{10} z^4}$$

Mar 28-9:45 AM