

7.1 Notes
Multiplication Properties of Exponents

I will print notes
this week!

$6x^n$ — exponent
base
Coefficient

Terms				
1 #	2 #	3 #	many #	plain # with no variables
Monomials	Binomials	Trinomials	Polynomials	Constants
$6x$	$6x + 7$	$6x + 7y + 1$	$6x^3 + 4x^2 + x + 1$	$6x + 7$
7	$7 + 8y$	$8y^2 + 7y + 9$		constant
$8xy$	$8xy - 4$			100, 81, 6

Example 1: Monomial?

10 yes

$f + 24$ no

h^2 yes

j yes

$23abcd^2$ yes

$\frac{xyz^2}{2}$ yes

$x^2 + x + .3$ no

$\frac{5}{t}$ no

can't have variable in denom.

Part 2: Simplify

_____ of _____	$a^m \cdot a^n = a^{m+n}$
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$(6n^3)(2n^7)$
 $6n^3 \cdot 2n^7$
 $12 \underbrace{nnnnnnnnnn}_{3+7}$
 $12n^{10}$

$(6cd^5)(5c^5d^2)$
 $6c^1d^5 \cdot 5c^5d^2$
 $30 \underbrace{cccccc}_{5+1} \underbrace{ddddd}_{2+5}$
 $30c^6d^7$

$(r^4)(-12r^7)$
 $r^4 \cdot -12r^7$
 $-12r^{11}$

Power of a Power	$(a^m)^p = a^{mp}$	(Piggyback Rule)
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$(x^3)^5$
 $x^3 \cdot x^3 \cdot x^3 \cdot x^3 \cdot x^3$
 x^{15}

$[(x^3)^2]^4$
 x^{24}

$(3^2)^4$
 3^8

Power of a Product	$(ab)^m = a^m b^m$	Distribute
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$(5xy)^3 = (5xy)(5xy)(5xy)$
 $5^3 x^3 y^3$

$(-2a^4b^3)^3$
 $(-2)^3 a^{12} b^9$

$\pi(2xy^2)^2$
 $\pi 2^2 x^2 y^4$

Homework Examples

$[(3^4)^4]^4$
 3^{64}

$(3p^5r^2)^4(-7p^3r^4)^2(6pr^3)$
 $3^4 p^{20} r^8 \cdot (-7)^2 p^6 r^8 \cdot 6 p^1 r^3$
 $23,814 r^{19} p^{27}$

