

L3: Variables with Exponent Laws

Scheduled Review

	Constant	Coefficient	Variables	# of terms	Type	Degree
$5x^3 - 4x^2 + x - 7$	-7	5	x	4	 	3
$4a^2b^3c - 7a^3c - c^2 + 9$	+9	-1	a,b,c	4		6

Multiply each of the following monomials

$$(7x^3y^5)(8x^2y^4) = 56x^5y^9$$

$$(-3a^2b^9c)(5a^7b^4c^6) = -15a^9b^{13}c^7$$

$$(-3a^2b^9c)(5b^2c^3a^6) = -15a^8b^{11}c^4$$

$$(15y^7x^5)(x^3y^4)^2 = (15y^7x^5)(x^6y^8) = 15x^{11}y^{15}$$

* You have to get rid of power on power first *

Try on your own

$$(7x^8y^2)(-2x^8y^7) =$$

$$(2x^9y)(15y^3x^6) =$$

$$(12x^8y^4z)(-3z^3x^3y^2) =$$

Steps:

- ① mult. coefficients
- ② Mult "like" variables
- ③ Use exponent rules

Divide each of the following monomials

$$\div \frac{14x^8y^6}{7x^5y^4} = 2x^3y^2$$

$$\div \frac{12e^7f^2}{9fe^2} = \frac{4}{3}e^5f = \frac{4e^5f}{3}$$

$$\div \frac{5x^5y^4}{15x^5y^2} = \frac{1}{3}x^0y^2 = \frac{1}{3}y^2 = \frac{y^2}{3}$$

$$\frac{x^9y^5}{x^9y^5} = x^0y^0 = (1)(1) = 1$$

*When your numerator and denominator are the same, answer is 1.

Try on your own

$$\frac{24x^5y^8}{8x^4y^3} =$$

$$\frac{4x^7y^7}{12y^2x^7} =$$

$$\frac{18x^4y^7z^2}{24x^2y^3} =$$

Use what you know about exponent laws to answer each of the following

$$(8x^3y^9)^{\frac{1}{3}} =$$

Bring our $\frac{1}{3}$ in to each piece.
 $= 2x^1y^3$

$$(6a^{\frac{1}{2}}b^{\frac{2}{3}})(4a^{\frac{3}{2}}b^{\frac{2}{3}}) =$$

$$= 24a^2b^{\frac{4}{3}}$$

$$\left(\frac{64x^8y^3}{16yx^2}\right)^{\frac{1}{2}} = \frac{8x^4y^{\frac{3}{2}}}{4y^{\frac{1}{2}}x^1}$$

$$= 2x^3y$$

Steps

- ① Divide coefficients
- ② Divide "like" variables
- ③ Use exponent rules (subtract)