

1A-BE TUESDAY 3-31-09

Happy BIRTHDAY RENE DesCartes - 3/31/1596
Cogito Ergo sum

① DEFINE "MONOMIAL"

② WHICH ARE MONOMIALS:

- Ⓐ $7x + 4$ Ⓑ $8x^6$ Ⓒ $\frac{4x}{3}$
Ⓓ $\frac{4x}{y}$ Ⓔ 0.0001 Ⓕ $9xyz^5$

③ $(7xy^4z^3)(-2x^5yz^8) = ?$

• Homework review: Pg. 413 #15-26

① MR $a^n \cdot a^m = a^{n+m}$ Ⓔ $x^4x^5 = x^9$

RECALL

When multiplying powers
with the same base,
ADD the exponents.

A haiku?

Let's try to discover THE next
EXONENT RULE (SHORTCUT):

$$\begin{aligned}
 \text{Simplify: } (2^4)^3 &= (2^4) \cdot (2^4) \cdot (2^4) \\
 &= (2 \cdot 2 \cdot 2 \cdot 2)(2 \cdot 2 \cdot 2 \cdot 2)(2 \cdot 2 \cdot 2 \cdot 2) \\
 &= 2^{12}
 \end{aligned}$$

How can you go directly
from $(2^4)^3$ to 2^{12} ?

Right! Multiply THE EXONENTS.

PPR Power to a Power Rule

When RAISING A power to a power,
multiply THE EXONENTS.

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

$$\textcircled{\text{Ex}} \quad (x^5)^2 = ?$$

$$x^{10}$$

$$\textcircled{\text{Ex}} \quad [(y^4)^2]^3$$

$$= [y^8]^3$$

$$= y^{24}$$

$$\begin{array}{l} \text{Ex 3} \\ \text{Pg 411} \end{array} \quad [(3^2)^3]^2$$

$$[3^6]^2 = \boxed{3^{12}} = 531,441$$

$$\textcircled{\text{Ex}} \quad [(2^3)^2]^3 = \boxed{2^{18}}$$

Homework: • Read Ch 8-1
• Pg 413 # 29, 30