

# Ch 2.5 Exponent Laws Part 2

September 22, 2016 9:43 AM

Review:  $(x^A)^B = x^{A \times B}$

Check:  $(2 \times 5)^3 = 2^3 \times 5^3 \checkmark$

$(2 + 5)^3 = 2^3 + 5^3 \times$   
 $343 \neq 8 + 125$   
 $133$

$(\frac{6}{2})^3 = \frac{6^3}{2^3} = \frac{216}{8} \checkmark$   
 $3^3 = 27$   
 $= 27$

$(6 - 2)^3 = 6^3 - 2^3 \times$   
 $64 \neq 216 - 8$

## The Exponent Laws:

①  $x^A \cdot x^B = x^{A+B}$

②  $x^A \div x^B = x^{A-B}$

③  $(x^A)^B = x^{A \times B}$

④  $(x \cdot y)^A = x^A \cdot y^A$

⑤  $(\frac{x}{y})^A = \frac{x^A}{y^A}$

BUT

$(x+y)^A \neq x^A + y^A$

New

Try: a)  $(3 \times 7^2)^3 = 3^3 \times 7^6$

$(3+5)^2 \neq 3^2 + 5^2$   
 $8^2 \neq 9 + 25$

$$b) \left( \frac{6^2}{5^3} \right)^4 = \frac{6^8}{5^{12}}$$

$$c) (4^2 \times 4^3)^2 - (4^8 \div 4^2)^3$$

$$\underline{4^4 \times 4^6} - \underline{4^{24} \div 4^6}$$

$$4^{10} - 4^{18}$$

$$1048576 - 687194767360$$

$$= \underline{-6.87 \times 10^{10}}$$

HW: P 84 # 4, 5, 8, 10, 11, 14, 16  
ODD LETTERS

Ch 2 Test coming in ~1 week