

October 21, 2016
 5.5 Exponents

- ① $a^m \cdot a^n = a^{m+n}$
- ② $(a^m)^n = a^{mn}$
- ③ $\frac{a^m}{a^n} = a^{m-n}$
- ④ a. ~~$\frac{a^{-m}}{1} = \frac{1}{a^m}$~~
- b. ~~$\frac{1}{a^{-m}} = a^m$~~

Oct 21-9:49 AM

meaning $\frac{x^3}{x^3} = \frac{\boxed{x \cdot x \cdot x}}{\boxed{x \cdot x \cdot x}}$
 $= 1 \cdot 1 \cdot 1$
 $= 1$

Rule $\frac{x^3}{x^3} = x^{3-3=0} = x^0$

$2x^2 - 3x + 5$
 $2 \cdot x^{\textcircled{2}} - 3 \cdot x^{\textcircled{1}} + 5 \cdot x^{\textcircled{0}}$

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$\frac{a^{-3} b^4 c^{-5}}{a^2 b^{-4} c^{-6}}$ ① apply Neg. Exp Rule

$\frac{1 \cdot b^4 \cdot b^4 \cdot c^6}{a^2 \cdot a^3 \cdot c^5}$ ② Power of Quotient Rule

$\frac{b^8 c^6}{a^5}$

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$\left(\frac{x^3}{x^2}\right)^{-2}$

$(x^1)^{-2} = \frac{1}{(x^1)^2} = \frac{1}{x^2}$

alternatively $\left(\frac{x^3}{x^2}\right)^{-2} = \frac{(x^3)^{-2}}{(x^2)^{-2}} = \frac{x^{-6}}{x^{-4}} = \frac{x^{-6}}{x^{-4}} = \frac{x^{-6}}{x^{-4}} = \frac{1}{x^2}$

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$x^{5x+2} \cdot x^{6x-4}$

Same Base

$x^{(5x+2)+(6x-4)}$

x^{11x-2}

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$(2^4 x^6 y^{-3} z^5)^4$

Base

$(2^4)^4 \cdot (x^6)^4 \cdot (y^{-3})^4 \cdot (z^5)^4$

$16 \cdot x^{24} \cdot y^{-12} \cdot z^{20}$

$\frac{16 x^{24} z^{20}}{y^{12}}$

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$$(5^{-2}x^6y^4)^{-3}$$

$$(5^{-2})^{-3} \cdot (x^6)^{-3} \cdot (y^4)^{-3}$$

$$5^6 \cdot x^{-18} \cdot y^{-12}$$

$$\frac{15625}{x^{18}y^{12}}$$

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$$(9a+3b)^{11} \cdot (9a+3b)^4$$

$$(9a+3b)^{15}$$

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$$(a+b)^2 = (a+b)(a+b) \quad \text{FOIL}$$

$$= a^2 + ab + ab + b^2$$

$$= a^2 + 2ab + b^2$$

$\neq a^2 + b^2$

Oct 21-10:45 AM

Do 5.4 & 5.5
for Monday

Oct 21-10:49 AM