More Exponent Laws with Mixed Bases.

Wednesday, October 2, 2019 12:16 PM

$2x^2 \cdot 3x^3$ think of it as: $2 \cdot 3 \cdot x^2 \cdot x^3$

$6x^5$

$-3x^4 \cdot 5x^2 = -15x^6$

$-2x^2y^3 \cdot -4x^3y^5 = 8x^5y^8$

Try: Simplify

① $-5x^4 \cdot 4x^1$

$-20x^5$

② $-2x^3y^4 \cdot -5x^5y^6$

$10x^8y^{10}$

$x \cdot x \cdot x \cdot x \cdot x$

Eg $(2x^2)^3 = 2^3 \cdot (x^2)^3$

$8x^6$

$(-x^3)^4 = (-1)^4 \cdot x^{12} = x^{12}$

$(-x^3)^3 = (-1)^3 \cdot x^9 = -x^9$

Try $(-2x^2)^3 \cdot (3x^4)^2$

$(-2)^3(x^2)^3 \cdot 3^2 \cdot (x^4)^2$

$-8x^6 \cdot 7x^5 = -14x^{11}$

$\frac{8}{2}\frac{x^4}{x^3} = 4x$

$\frac{6}{4}\frac{x^7}{x^3} = \frac{3}{2}x^4$ or $\frac{3x^4}{2}$

$\frac{12}{10}\frac{x^4}{x^6} = \frac{6}{5}x^{-2} = \frac{6}{5x^2}$

$\frac{x^4}{x^6}\ \frac{x\cdot x\cdot x\cdot x}{x\cdot x\cdot x\cdot x\cdot x\cdot x} = \frac{1}{x^2}$

Try: $\frac{2x^2 \cdot 6x^4}{(3^5x^3)^2} = \frac{12}{9}\frac{x^6}{x^6} = \frac{4}{3}$

$x^0 = 1$

Handout #6

1-26

27-42 harder

(14) $\left((-1ba^2)^3 \cdot 2a^0b^4\right)^2$

$\left(-b^3a^6 \cdot 2a^0b^4\right)^2$

(16) $(2x^4y^3)^4 \cdot x^4y^3$

$16x^{16}y^{12} \cdot x^4y^3$

$16x^{20}y^{15}$

$$\left(-b^3a^2 \cdot 2a^6b^1\right)$$

$$\left(-2a^6b^7\right)^2$$

$$4a^{12}b^{14}$$

$$16x^{20}y^{15}$$

(38) $$\frac{4uv^3 \cdot 2uv^4}{(u^3v^2)^3} = \frac{2u^2v^7}{u^9v^6} = \frac{2v}{u^7}$$

$$\frac{u^2}{u^9} = u^{-7} \qquad u^{-7} = \frac{1}{u^7}$$

$$\frac{y \cdot u}{y \cdot y \cdot u \cdot u \cdot u \cdot u \cdot u \cdot u \cdot u}$$

(24) $$\frac{4x^3y^3}{4x^1y^1 \cdot 2x^0y^3} = \frac{4x^3y^3}{8xy^4} = \frac{1x^2}{2y}$$

$$= \frac{x^2}{2y}$$

(26) $$\frac{3u^2v^2}{4v^1u^3 \cdot 2u^3v^2} = \frac{3u^2v^2}{8u^6v^3} = \frac{3}{8u^4v}$$