

Bellwork 1-18-19

Simplify.

$$1) \frac{9n^5}{27n^5}$$

$$\frac{9}{27} = \frac{1}{3}$$

$$n^{5-5} = n^0 = 1$$

$$\frac{1}{3}(1) = \frac{1}{3}$$

$$(2) \frac{16x^4}{12x^{11}}$$

$$\frac{16 \div 4}{12 \div 4} = \frac{4}{3}$$

$$x^{4-11} = x^{-7}$$

$$\frac{4}{3x^7}$$

$$(3) \frac{11^{12}}{11^8}$$

$$11^{12-8} = 11^4$$

Dividing exponents with two variables

$$1) \frac{18x^6y^9}{8x^3y^5}$$

$$\frac{18 \div 2}{8 \div 2} = \frac{9}{4}$$

$$x^{6-3} = x^3$$

$$y^{9-5} = y^4$$

$$\frac{9x^3y^4}{4}$$

$$(2) \frac{24x^6y^5}{20x^4}$$

$$\frac{24 \div 2}{20 \div 2} = \frac{12 \div 2}{10 \div 2} = \frac{6}{5}$$

$$x^{6-4} = x^2$$

$$\frac{6x^2y^5}{5}$$

$$5 = 5^1 = 5^{1 \cdot 3}$$

$$3) \left(\frac{5x^5}{8x^3} \right)^3$$

$$\frac{5^3 x^{5 \cdot 3}}{8^3 x^{3 \cdot 3}}$$

$$\frac{125x^{15}}{512x^9}$$

$$x^{15-9} = x^6$$

$$\frac{125x^6}{512}$$

(4)

$$\left(\frac{7x^3}{4x^2} \right)^{-3}$$

$$\frac{7^{-3} x^{3 \cdot -3}}{4^{-3} x^{2 \cdot -3}} = \frac{7^{-3} x^{-9}}{4^{-3} x^{-6}}$$

$$\frac{4^3 x^6}{7^3 x^9} = \frac{64}{343 x^3}$$

$$x^{6-9} = x^{-3}$$

1. Distribute exponent into ()
2. Multiply exponents
3. Subtract exponents
4. place exponent.