

Dividing Like Bases with Exponents

Do Now: Simplify each of the following

$$(2^{-2})^0$$

$$x^{-5}$$

$$4^5(4^{-3})$$



Write the following in expanded form:
(What does it mean to be x^3 ... $x \cdot x \cdot x$)

1. $\frac{4^5}{4^3}$

2. $\frac{3^2}{3^4}$

3. $\frac{b^4}{b^5}$

To divide powers that have the same base, subtract the exponents and keep the base.

$$\left(\frac{a^m}{a^n} \right) = a^{m-n}$$

1. $\frac{3^7}{3^5}$

2. $\frac{a^2 b^5}{b^3}$

$$3. \frac{(x-4)^6}{(x-4)^2}$$

$$4. \left(\frac{2a^4b^3}{a^3b^5} \right)^2$$

$$5. \frac{3xy^{-1}}{2} \cdot \frac{8x^{-5}y}{6x^2}$$

$$6. \frac{3x^2y^{-2}}{2y^0} \div \frac{9x^{-2}y^3}{4x^2}$$

$$1) \left(\frac{c^4}{c^6} \right)^1$$

$$2) \frac{4^5 4^3}{4^6}$$

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

$$4) \left(\frac{5ab^2}{a^{-1}b^3} \right)^2$$

$$5) \frac{b^3 c^5}{b^4 c}$$

$$6) -\left(\frac{b^3}{4}\right)^2$$

$$7) \left(\frac{y^3}{y^5}\right)^2$$

$$8) \left(\frac{3}{2}\right)^3$$

$$9) \left(\frac{3x^0}{y^{-1}} \right)^3$$

$$10) x^{-5} \cdot \frac{1}{x^{-8}}$$

$$11) \frac{3x^{-4}y^5}{(2x^3y^{-7})^{-2}}$$

$$12) \frac{3x^3y}{4x} \cdot \frac{12x^{-2}y}{y^{-3}}$$

$$13. \frac{12x^3(x-1)}{8x^5(x-1)^3}$$

$$14. \frac{x^{-3}y^2}{5x} \cdot \frac{15xy^{11}}{y^6}$$

$$15. \frac{3a^3b^4}{(2a)^0} \div \frac{9a^{-2}b^4}{4b^{-5}}$$