

PROPERTIES

$$1. X^m \cdot X^n = X^{m+n}$$

$$2. (X^m)^n = X^{m \cdot n}$$

$$3. X^0 = 1$$

$$4. X^{-1} = \frac{X^{-1}}{1} = \frac{1}{X^1}$$

$$5. \frac{1}{X^{-a}} = \frac{X^a}{1}$$

$$6. \left(\frac{X}{Y}\right)^{-3} = \left(\frac{Y}{X}\right)^3$$

$$7. \left(\quad \right)^m =$$

TAKE EVERYTHING
TO THAT
POWER

EVERYTHING
INSIDE PARENS
IS EITHER MULTIPLICATION
OR DIVISION

$$(XY)^m = X^m Y^m$$

$$8. \frac{X^3}{X^5}$$

SUBTRACT SMALLER EXPONENT FROM
THE LARGER ONE, AND YOU HAVE
X TO THAT POWER WHERE THE
LARGER EXPONENT WAS

$$= \frac{1}{X^2}$$

$$1. (a) (2^0)(2^3)$$

$$= 2^{0+3}$$

$$= 2^3$$

$$= \textcircled{8}$$

$$(b) (2^0)(2^{-4})$$

$$= \frac{(2^0)(2^{-4})}{1}$$

$$= \frac{2^0}{2^4}$$

$$= \frac{1}{2^4}$$

$$= \textcircled{\frac{1}{16}}$$

$$(c) (2^2)^3$$

$$= 2^{2 \cdot 3}$$

$$= 2^6$$

$$= \textcircled{64}$$

$$(d) 2^{-4}$$

$$= \frac{2^{-4}}{1}$$

$$= \frac{1}{2^4}$$

$$= \textcircled{\frac{1}{16}}$$