

Power of a Power-

$$(x^m)^n = x^{mn}$$

Power of a Product-

$$(xy)^n = x^n y^n$$

Powers of -1 =

Even powers of -1 are = to 1

Odd powers of -1 are = to -1

Examples of powers of negative 1: $-1 \cdot -1 \cdot -1 \cdot -1 \cdot -1$

$$(-y)^6 = -1^6 y^6 = 1y^6 = y^6$$

$$(-5x)^3 = -5^3 x^3 = -125x^3$$

$$(-3y)^4 = -3^4 y^4 = 81y^4$$

$$1) (6^2)^3 = 6^6$$

$$2) (-3b^2)^5 = -3^5 b^{10} = -243 b^{10}$$

$$3) (5j^2k^3)^4 = 5^4 j^8 k^{12} = 625j^8k^{12}$$

$$4) 2(3a^2)^3 = 2(27a^6) = 54a^6$$

$$5) (-ab^5)(a^3)^2 = (-ab^5)(a^6) = -a^7b^5$$

$a \cdot a^6 = a^{1+6} = a^7$
 $-a \cdot a^6$

$$6) (5f^3t^7)^3 (d^4f^2)^5 = (125f^9t^{21})(d^{20}f^{10}) = 125d^{20}f^{19}t^{21}$$

Simplify if a = 4 & b = -3

$$7) (-2a)^2 = (-2 \cdot 4)^2 = (-8)^2 = 8 \cdot 8 = 64$$

$$8) (4b)^a = (4 \cdot -3)^4 = (-12)^4 = 20736$$

9) Find the volume of a cube if the edge is $4x^2y^3$

$$V = s^3$$

$$V = (4x^2y^3)^3$$

$$V = 64x^6y^9$$