

0.1 Exponents (Review)

Hw w/s 0.1

a^m ← exponent
base

Properties

$$x^4 = x \cdot x \cdot x \cdot x \quad (\text{repeated multiplication})$$

Multiplying: $a^m \cdot a^n = a^{m+n}$

$$2^3 \cdot 2^4 = 2^{3+4} = 2^7$$

Power of a Power: $(a^m)^n = a^{mn}$

$$(3^2)^3 = 3^{2 \cdot 3} = 3^6$$

Power of a Product

$(ab)^n = a^n b^n$

$$(2x)^3 = 2^3 \cdot x^3 = 8x^3$$
$$2x \cdot 2x \cdot 2x = 2 \cdot 2 \cdot 2 \cdot x \cdot x \cdot x$$

Zero Exponent: $a^0 = 1$

$$5^0 = 1$$

$$(7xy^2)^0 = 1$$

① $(3xy^2)^2 \cdot (2y^4z)^3$

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

$$9x^2 y^4 \cdot 8y^{12} z^3 = 72x^2 y^{16} z^3$$

② $(-5j^4k^3)^2 (-3j^2k^0)^3$

$$(-5)^2 (j^4)^2 (k^3)^2 \cdot (-3)^3 (j^2)^3 (k^0)^3$$

$$25j^8k^6 \cdot -27j^6 \cdot 1$$

$$-675j^{14}k^6$$