ST. LAWRENCE HIGH SCHOOL

A Jesuit Christian Minority Institution
STUDY MATERIAL
CLASS –VI
Subject – Algeb-Geom – First Term

CHAPTER 12 – EXPONENTS (Revision) **Date - 05.05.20**

In $\mathbf{5^4}$, 5 is the base and 4 is the exponent. We read 5^4 as 5 to the power 4.

$2^4 = 2 \times 2 \times 2 \times 2 = 16$

Laws of Exponents :

Law	Example
$\mathbf{x^0 = 1}$	$7^0 = 1$
$\mathbf{x^m x^n = x^{m+n}}$	$x^2x^3 = x^{2+3} = x^5$
$\mathbf{x^m/x^n = x^{m-n}}$	$x^6/x^2 = x^{6-2} = x^4$
$\mathbf{(x^m)^n = x^{mn}}$	$(x^2)^3 = x^{2\times3} = x^6$
$\mathbf{x^n y^n = (xy)^n}$	$x^3y^3 = (xy)^3$

Some more examples :

1. $(-7)^{10} \times (-7)^{12}$

= [(-7) × (-7) × (-7) × (-7) × (-7) × (-7) × (-7) × (-7) × (-7) × (-7)] × [(-7) × (-7) × (-7) × (-7) × (-7) × (-7) × (-7) × (-7) × (-7) × (-7) × (-7) × (-7)].

= $(-7)^{10+12}$ [Exponents are added]

= $(-7)^{22}$

2. $(5^2)^7$

= $(5)^{7\ X\ 2}$

= 5^{14}

3. $[(-3)^4]^2$

= $(-3)^{4X2}$

= $(-3)^{8}$

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

= $(5)^{3-1}$

= 5^{2}

Squares – If a number is multiplied by itself, the product so obtained is called the square of that number. Exp - $5^{2} = 5 \text{ X } 5 = 25$.

Cubes – The number obtained on multiplying a given number by itself three times is called the cube of that number. Exp - $3^{3} = 3 \text{ X } 3 \text{ X } 3 = 27$.

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