

Class 7-Mathematics

Chapter 4

EXPONENTS(Revision)

Definition: If 'a' is any rational number and 'n' is any natural number,

$a \times a \times a \times a \times \dots \times a$ (n times) = a^n , a is known as the Base and n is known as the Exponent or Index or Power.

Examples:

Number	Exponential form	Base	Exponent
16	$2 \times 2 \times 2 \times 2 = 2^4$	2	4
243	$3 \times 3 \times 3 \times 3 \times 3 = 3^5$	3	5
-125	$(-5) \times (-5) \times (-5) = (-5)^3$	-5	3
$\frac{81}{256}$	$\frac{3}{4} \times \frac{3}{4} \times \frac{3}{4} \times \frac{3}{4} = \left(\frac{3}{4}\right)^4$	$\frac{3}{4}$	4

Solve the following

1. Express the following in the exponential form:

i) $6 \times 6 \times 6 \times 6 \times 6$

iii) $a \times a \times a \times a \times b \times b \times b \times c \times c$

2. Simplify the following

i) $(-4) \times (-2)^6$

ii) $(-2)^3 \times (-10)^3$

iii) $(-1)^{25}$

3. Find the value of x.

i) $(-3)^x = -729$

ii) $\left(\frac{3}{4}\right)^x = \frac{243}{1024}$

4. Write the prime factorisation of the following number in exponential form:

i) 3600

ii) 4725