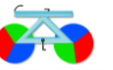


NCERT CLASS 7 INDICES (EXPONENTS & POWERS)

FORMULAE



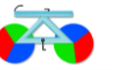
Multiplying Powers with the Same Base

RULE 1

$$a^m \times a^n = a^{m+n}$$

Example:

$$\begin{aligned} 3^2 \times 3^4 &= 3^{2+4} \\ &= 3^6 \end{aligned}$$



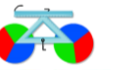
Dividing Powers with the Same Base

RULE 2

$$a^m \div a^n = a^{m-n}$$

Example:

$$\begin{aligned} 3^5 \div 3^2 &= 3^{5-2} \\ &= 3^3 \end{aligned}$$



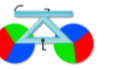
Power of a Power

RULE 3

$$(a^m)^n = a^{m \times n}$$

Example:

$$\begin{aligned}(3^2)^5 &= 3^{2 \times 5} \\ &= 3^{10}\end{aligned}$$



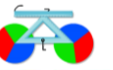
Multiplying Powers with the Same Exponents

RULE 4

$$a^m \times b^m = (ab)^m$$

Example:

$$\begin{aligned} 3^2 \times 5^2 &= (3 \times 5)^2 \\ &= 15^2 \end{aligned}$$



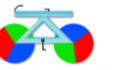
Multiplying Powers with the Same Exponents

RULE 5

$$\frac{a^m}{b^m} = \left(\frac{a}{b}\right)^m$$

Example:

$$\frac{5^2}{7^2} = \left(\frac{5}{7}\right)^2$$



Numbers with exponent zero

RULE 6

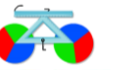
$$(a)^0 = 1,$$

Where a is a non-zero number

Example:

$$(5)^0 = 1;$$

$$(-5)^0 = 1;$$



Numbers with negative exponent

RULE 7

$$(a)^{-1} = \frac{1}{a}$$

Where a is a non-zero number

Example:

$$(5)^{-1} = \frac{1}{5}$$