Sathi pasala - 3rd week

Grade 9

Indices - Lesson 12

Do the review exercise to recall your knowledge about indices

When two powers with same base are multiplied, the two indices are added to get the answer.(the base did not change)

Examples:

$$2^3 \times 2^2 = 2^{3+2} = 2^5$$
 $X^7 \times x = x^{7+1} = x^8$ $a^4 \times a^7 = a^{4+7} = a^{11}$

Do the exercise 12.1

When two powers with same base are divided by each other, the two indices are subtracted from each other to get the answer.(the base doesn't change)

Examples:

$$3^7 \quad 3^4 = 3^{7-4} = 3^3 \qquad \qquad \frac{x^6}{x^2} = x^{6-2} = x^4$$

Do the exercise 12.2

To convert a negative index into a positive index ,the negative index in the numerator should be moved to denominator and the negative index in the denominator should be moved to numerator.

Examples

$$\frac{1}{x^{-3}} = x^3 \qquad \qquad y^{-5} = \frac{1}{y^5} \qquad \qquad 2x^{-4} = \frac{2}{x^4}$$

Do the exercise 12.3

 \blacktriangleright The value of the power which the index is zero (0) is 1.

Examples:

X⁰ = 1 $25^0 = 1$ $\frac{a^7}{a^7} = a^{7-7} = a^0 = 1$ $(3a)^0 = 1$

Do the exercise 12.4

When simplifying an algebraic expression of a power of a power, the indices are multiplied.

Examples:

 $(X^4)^3 = x^{4\times 3} = x^{12}$ $(2a^3)^2 = 2^2 \times a^{3\times 2} = 2^2 \times a^6 = 4a^6$

Do the exercise 12.5