



Exponents of Real Numbers Ex 2.1 Q4

**Answer :**

We are given  $27^x = \frac{9}{3^x}$ . We have to find the value of  $x$

$$\text{Since } (3^3)^x = \frac{3^2}{3^x}$$

By using the law of exponents  $\frac{a^m}{a^n} = a^{m-n}$  we get,

$$3^{3x} = 3^{2-x}$$

On equating the exponents we get,

$$3x = 2 - x$$

$$3x + x = 2$$

$$4x = 2$$

$$x = \frac{2}{4}$$

$$x = \frac{1}{2}$$

Hence,  $x = \frac{1}{2}$

Exponents of Real Numbers Ex 2.1 Q5

**Answer :**

From the following we have to find the value of x

(i) Given  $2^{5x} \div 2^x = \sqrt[5]{2^{20}}$

By using rational exponents  $\frac{a^m}{a^n} = a^{m-n}$

$$2^{5x-x} = 2^{20 \times \frac{1}{5}}$$

$$2^{5x-x} = 2^{4 \times \frac{1}{1}}$$

On equating the exponents we get,

$$5x - x = 4$$

$$4x = 4$$

$$x = \frac{4}{4}$$

$$x = \frac{A}{A}$$

$$x = 1$$

The value of x is **1**

\*\*\*\*\* END \*\*\*\*\*