9^{th} Classes – Maths
Chapter-1 (Number Systems)
Exercise - 1.6
(Solution)

Que 1). Find:

(i) $64^{1/2}$

(ii) $32^{1/5}$

(iii) $125^{1/3}$

Solution

i) **$64^{1/2}$** =

We can write 64 as a square of 8

$64^{1/2} = 8^{(2)1/2} = 8$

ii) **$32^{1/5}$** = $(2^5)^{1/5} = 2$

iii) **$125^{1/3}$** = $(5^3)^{1/3} = 5$

Que 2) Find:

(i) $9^{3/2}$

(ii) $32^{2/5}$

(iii) $16^{3/4}$

(IV) $125^{-1/3}$

Solution:

To solve, this factorise given number in this way:

(i) **$9^{3/2}$** = $(3^2)^{3/2} = 27$

(ii) **$32^{2/5}$** = $(2^5)^{2/5} = 4$

(iii) **$16^{3/4}$** = $(2^4)^{3/4} = 8$

(iv) **$125^{-1/3}$** = $1/125^{1/3} = 1/(5^3)^{1/3} = 1/5$

Que 3) Simplify:

(i) $2^{2/3}.2^{1/5}$

(ii) $(1/3^3)^7$

(iii) $11^{1/2}/11^{1/4}$

(iv) $7^{1/2}.\ 8^{1/2}$

Solution

We can write as:
From law of exponents you can see there expansions.

i) $2^{2/3}.2^{1/5}$

$= 2^{2/3+\ 1/5} = 2^{10+3/15} = 2^{13/15}$

ii) $(1/3^3)^7$

$= 1/3^{3X7} = 1/3^{21}$ or 3^{-21}

iii) $11^{1/2}/11^{1/4}$

$= 11^{1/2\ -1/4} = 11^{1/4}$

IV) $7^{1/2}.\ 8^{1/2}$

$= (7X8)^{1/2} = 56^{1/2}$