

① 9ನೇ ಸಂಪನ್ಮೂಲ

(i) $64^{\frac{1}{2}}$

$= (8^2)^{\frac{1}{2}}$

$= 8^{\frac{1}{2} \times \frac{1}{2}}$

$= 8^1 = 8$

64
ಇದು 8 ರ ವರ್ಗವಾಗಿದೆ.

$8 \times 8 = 64$

$8^2 = 64$

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

(ii) $32^{\frac{1}{5}}$

$= (2^5)^{\frac{1}{5}}$

$= 2^{\frac{1}{5} \times \frac{1}{5}}$

$= 2^1 = 2$

$$\begin{array}{r} 2 \overline{)32} \\ \underline{2} \\ 16 \\ \underline{2} \\ 8 \\ \underline{2} \\ 4 \\ \underline{2} \\ 2 \\ \underline{2} \\ 0 \end{array}$$

ಉದಾಹರಣೆ -

$32 = 2 \times 2 \times 2 \times 2 \times 2$

$32 = 2^5$

(iii) $125^{\frac{1}{3}}$

$= (5^3)^{\frac{1}{3}}$

$= 5^{\frac{1}{3} \times \frac{1}{3}}$

$= 5^1 = 5$

$$\begin{array}{r} 5 \overline{)125} \\ \underline{5} \\ 75 \\ \underline{5} \\ 25 \\ \underline{5} \\ 25 \\ \underline{5} \\ 0 \end{array}$$

ಉದಾಹರಣೆ

$125 = 5 \times 5 \times 5$

$125 = 5^3$

② 9ର ଚାନ୍ଦିକା

$$① 9^{\frac{3}{2}}$$

$$= (3^2)^{\frac{3}{2}}$$

$$= 3^{1 \times 3}$$

$$= 3^3$$

$$= 3 \times 3 \times 3$$

$$= \underline{27}$$

$$\begin{array}{r} 3 \overline{) 9} \\ \underline{3} \\ 1 \end{array}$$

$$9 = 3^2$$

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

$$② 32^{\frac{5}{5}}$$

$$= (2^5)^{\frac{5}{5}}$$

$$= 2^{1 \times 5}$$

$$= 2^5 = 2 \times 2 \times 2 \times 2 \times 2$$

$$\begin{array}{r} 2 \overline{) 32} \\ \underline{2} \\ 16 \\ \underline{2} \\ 8 \\ \underline{2} \\ 4 \\ \underline{2} \\ 2 \\ \underline{2} \\ 1 \end{array}$$

$$32 = 2 \times 2 \times 2 \times 2 \times 2$$

$$32 = 2^5$$

$$③ 16^{\frac{3}{4}}$$

$$= (2^4)^{\frac{3}{4}}$$

$$= 2^{1 \times 3}$$

$$= 2^3 = 2 \times 2 \times 2 = 8$$

$$\begin{array}{r} 2 \overline{) 16} \\ \underline{2} \\ 8 \\ \underline{2} \\ 4 \\ \underline{2} \\ 2 \\ \underline{2} \\ 1 \end{array}$$

$$16 = 2 \times 2 \times 2 \times 2$$

$$16 = 2^4$$

$$\begin{aligned}
 & \textcircled{iv} \quad 125^{-\frac{1}{3}} \\
 & = (5^3)^{-\frac{1}{3}} \\
 & = 5^{3 \times -\frac{1}{3}} \\
 & = 5^{-1} = \frac{1}{5}
 \end{aligned}$$

$$\begin{array}{r}
 5 \overline{) 125} \\
 \underline{5} \\
 25 \\
 \underline{25} \\
 0
 \end{array}
 \quad
 \begin{aligned}
 125 &= 5 \times 5 \times 5 \\
 125 &= 5^3
 \end{aligned}$$

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

③ संक्षेप

$$\begin{aligned}
 & \textcircled{i} \quad 2^{\frac{2}{3}} \times 2^{\frac{1}{3}} \\
 & = 2^{\frac{2+1}{3}} \\
 & = 2^{\frac{3}{3}} \\
 & = 2^1
 \end{aligned}$$

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

3, 5

$$3 \times 5 = 15 \text{ सं. सं. सं.}$$

$$\begin{aligned}
 & \textcircled{ii} \quad \left(\frac{1}{3}\right)^7 \\
 & = \left(3^{-1}\right)^7
 \end{aligned}$$

$$\textcircled{ii} \quad \left(\frac{1}{3}\right)^7$$

$$= (1 \times 3^{-3})^7$$

$$= (3^{-3})^7$$

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

$$= 3^{-3 \times 7}$$

$$= 3^{-21}$$

$$= \frac{1}{3^{21}}$$

③

$$\begin{aligned}
 &= \frac{1}{4} \cdot \frac{1}{4} = \frac{1}{16} \\
 &= \frac{1}{2} \cdot \frac{1}{4} \\
 &= \frac{1}{4}
 \end{aligned}$$

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

$$\begin{aligned}
 &= \frac{1}{2} \cdot \frac{1}{4} \\
 &= \frac{2}{5} \cdot \frac{1}{4} \\
 &= \frac{2}{5} \\
 &= \frac{1}{5}
 \end{aligned}$$

$$\begin{array}{r}
 2 \overline{) 2.4} \\
 \underline{1.2} \\
 2 \times 2 = 40.50.50
 \end{array}$$

④

$$\begin{aligned}
 &7^{\frac{1}{2}} \cdot 8^{\frac{1}{2}} \\
 &= (7 \times 8)^{\frac{1}{2}} \\
 &= \sqrt{56}
 \end{aligned}$$

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