

Foundation Batch



MATHS

Square and Square Root
Cube and Cube Root **Part -2**

LIVE

28-11-2024 07:00PM



①

$$\sqrt{5776}$$

Diagram showing the decomposition of 5776 into two squares:

$$7^2 = 49$$

$$8^2 = 64$$

Arrows point from 7 and 8 to the 7 and 8 in 5776, indicating the decomposition.

74

76

②

$$\sqrt{9801}$$

Diagram showing the decomposition of 9801 into two squares:

$$9^2 = 81$$

$$10^2 = 100$$

Arrows point from 9 and 10 to the 9 and 0 in 9801, indicating the decomposition.

91

99

③

$$\sqrt{12996}$$

Diagram showing the decomposition of 12996 into two squares:

$$11^2 = 121$$

$$12^2 = 144$$

Arrows point from 11 and 12 to the 12 and 9 in 12996, indicating the decomposition.

114

116

Special Case

$$(25)^2 = \underline{\underline{625}}$$

$$(35)^2 = 1225$$

$$(45)^2 = 2025$$

$$(85)^2 = 7225$$

$$\sqrt{7225} = 85$$

$$\sqrt{13225}$$

$\textcircled{11} \times 12$

$$\textcircled{115}$$

Square root of Non-Perfect Square No.

Formula

$$\sqrt{a} \pm \frac{b}{2\sqrt{a}}$$

$$\sqrt{63}$$

$$\sqrt{64 - 1}$$

(a) (b)

$$\sqrt{64} - \frac{1}{2\sqrt{64}}$$

$$8 - \frac{1}{2 \times 8} = 8 - \frac{1}{16}$$

$$8 - 0.06$$
$$\underline{\underline{7.94}}$$

$$\sqrt{85}$$

$$\sqrt{81+4}$$

$\textcircled{a}$ $\textcircled{b}$

$$\sqrt{a} + \frac{b}{2\sqrt{a}} = 9 + \frac{4^2}{2 \times 9}$$

$$9 + \frac{2}{9}$$

$$9 + 0.22$$

$$\textcircled{9.22}$$

$$(42)^3$$

$$64 \quad 96 \quad 48 \quad 08$$

$$\underline{\underline{74088}}$$

$$(a+b)^3 = \underline{a}^3 + \underline{b}^3 + 3a^2b + 3\underline{a}\underline{b}^2$$

$$\left(\frac{34}{16}\right)^3 = \overset{123}{\overset{150}{27 \quad 108 \quad 144 \quad 64}}$$

$$\underline{\underline{39304}}$$

$$\left(\frac{28}{16}\right)^3 =$$

$$\begin{array}{r} 384 \\ \underline{51} \\ 435 \\ \underline{96} \\ 139 \end{array}$$

08

96

$$\overset{123}{\overset{150}{384 \quad 512}}$$

$$\underline{\underline{21952}}$$

6x16

$$(24)^3 = \begin{array}{cccc} & & 58 & 102 \\ & \swarrow & \downarrow & \swarrow \\ 08 & 48 & 96 & 64 \end{array}$$
$$= \underline{\underline{13824}}$$

Cube Root (घनमूल)

$$\left\{ \begin{array}{l} 1^3 = 1 \\ 2^3 = 8 \\ 3^3 = 27 \\ 4^3 = 64 \\ 5^3 = 125 \\ 6^3 = 216 \\ 7^3 = 343 \\ 8^3 = 512 \\ 9^3 = 729 \end{array} \right.$$

$$\sqrt[3]{2744}$$

1^3 2^3

(14) ~~AB~~

$$\sqrt[3]{9261}$$

$\sqrt[3]{9261}$
 3³ 3³

21

$$\sqrt[3]{59319}$$

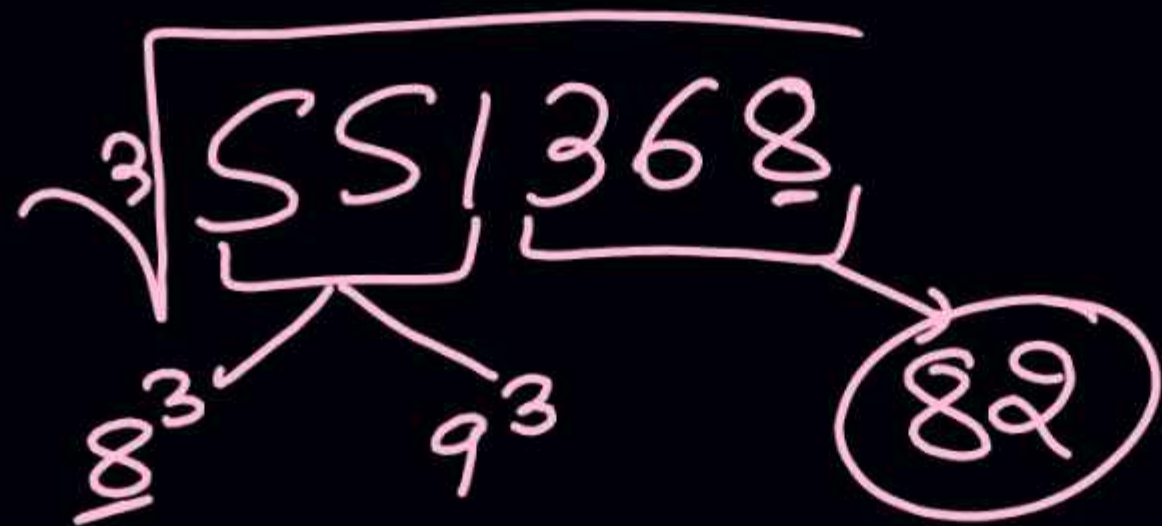
$\sqrt[3]{59319}$
 3³ 4³

39

$$\sqrt[3]{262144}$$

$\sqrt[3]{262144}$
 6³ 7³

64



Cube Root of Non perfect cube No.

Formula

$$\underline{a} \pm \frac{b}{3a^2}$$

$$\sqrt[3]{67}$$

$$\sqrt[3]{64+3}$$

$$4 + \frac{3}{3 \times 16}$$

$$4 + \frac{1}{16} = \frac{65}{16} = \underline{\underline{4.06}}$$

$$18) 100(0.05$$

$$\sqrt[3]{132}$$

$$75) 700(0.09$$

$$\sqrt{125+7}$$

$$\sqrt[3]{210}$$

$$\sqrt{216-6}$$

$$a - \frac{b}{3a^2}$$

$$= 6 - \frac{6^2}{3 \times 36} = 6 - \frac{1}{18}$$

$$a + \frac{b}{3a^2} = 5 + \frac{7}{3 \times 25}$$

$$5 + \frac{7}{75}$$

$$6 - 0.05 = 5.95$$

$$5.09$$



$$(36)^2$$

③

$$\underline{\underline{1296}}$$

③

09 36 36 ③

$$\underline{\underline{1296}}$$

1. $(36)^2 = ?$

(a) 1296

(b) 246

(c) 1024

(d) 1156



2. $\hat{4}2^2 + \underline{3}2^2 = ?$

(A) 2472

☒ (b) 2788

(c) 2488

(d) 12644

$$1764 + 1024$$

$$\underline{\underline{2788}}$$



$$a^2 - b^2$$

$$= \underline{\underline{(a+b)(a-b)}}$$

3. $\underline{36}^2 - \underline{24}^2 = ?$

(a) 640

☒ (b) 720

(c) 729

(d) 1024

$$(36+24)(36-24)$$

$$60 \times 12$$

$$720$$



4. What is the square root of 3364?

3364 का वर्गमूल क्या है?

(a) 64

(b) 62

~~(c) 58~~

(d) 52

$$\sqrt{3364}$$

Handwritten diagram showing the prime factorization of 3364: $3364 = 52^2 = (2^2 \times 13)^2 = 2^4 \times 13^2$. The factors are written as 52^2 and 6^2 with arrows pointing to 36, indicating a step in the calculation.

52

58



5. What is the square root of 5476?

5476 का वर्गमूल क्या है?

(a) 84

(b) 74

(c) 66

(d) 76

$$\sqrt{5476}$$

$10^2 \times 5476$
 $10^2 \times 10^2 \times 49 \times 16 \times 7$
 $10 \times 10 \times 7 \times 4 \times 7$
 74



6. Find the positive square root of $(34^2 - 16^2)$

$(34^2 - 16^2)$ का धनात्मक वर्गमूल ज्ञात कीजिए।

(a) 40

(b) 50

(c) 60

☒ (d) 30

$$(34+16)(34-16)$$

$$50 \times 18$$

$$= \sqrt{900}$$

$$= 30$$

$$98 \times 102$$

$$(100-2)(100+2)$$

$$100^2 - 2^2$$

$$10000 - 4$$

$$= \underline{\underline{9996}}$$

$$994 \times 1006$$

$$(1000-6)(1000+6)$$

$$(1000)^2 - 6^2$$

$$1000000 - 36$$

$$999964$$



Foundation Batch

$$\sqrt{\frac{69169}{10^8}}$$

$$\frac{1}{10^4} \sqrt{69169}$$

Handwritten work for finding the square root of 69169:

$26^2 = 676$
 $27^2 = 729$
The number 263 is circled, and 267 is written below it.

$$\frac{1}{10000} \times 263 = 0.0263$$

7. $\sqrt{0.00069169} = ?$

(a) 0.00243

(b) 0.000243

☒ (c) 0.0263

(d) 0.243

Simplification