

Jender Heart High School, Sec.-33B Rd.

Class: VIII

Teacher: Deepthi

Subject: Mathematics

Topic: Chapter - 3: Square roots & Cube roots

In the class we have already discussed about the basic concepts of the chapter and done Exercise - 3A and 3B, now let us start with Exercise - 3C & 3D.

IInd method to find square roots:

1st method is find the prime factors by using prime factorisation.

2nd method is by "Division method"

- Make pairs of the digit from the back.
- find the number whose square is less than/equal to the 1st pair.
- Subtract the pair with the ans. of square and then bring the next pair down (dividend - new)
- for division - double the previous divisor and fill the next no. to it

Exercise - 3C

Soln 1 (iii) 1444

$$\begin{array}{r}
 38 \\
 3 \overline{) 1444} \\
 \underline{-9} \\
 544 \\
 \underline{-544} \\
 0
 \end{array}$$

→ bring next pair down

divisor is doubled

$$\therefore \sqrt{1444} = 38$$

So, the square root of 1444 is 38.

(vii) 9025

$$\begin{array}{r}
 95 \\
 9 \overline{) 9025} \\
 \underline{-81} \\
 925 \\
 \underline{-925} \\
 0
 \end{array}$$

$$\therefore \sqrt{9025} = 95$$



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Soln 4: 7956

$$\begin{array}{r}
 89 \\
 \hline
 8 \overline{) 7956} \\
 \underline{-64} \downarrow \downarrow \\
 1556 \\
 \underline{-152} \\
 35
 \end{array}$$

So, 35 should be subtracted from 7956

$$\Rightarrow 7956 - 35 = 7921$$

$$\& \sqrt{7921} = 89$$

Soln 8: least number = 1000

$$\begin{array}{r}
 31 \\
 \hline
 3 \overline{) 1000} \\
 \underline{-9} \downarrow \downarrow \\
 100 \\
 \underline{-61} \\
 39
 \end{array}$$

$$\Rightarrow (32)^2 = 1024$$

So, 24 should be added to 1000

Exercise - 3 D

Soln 1 (iii) $\sqrt{156.25} = 12.5$

$$\begin{array}{r}
 12.5 \\
 \hline
 1 \overline{) 156.25} \\
 \underline{-1} \downarrow \downarrow \downarrow \downarrow \\
 22 056 \\
 \underline{-44} \downarrow \downarrow \\
 245 1225 \\
 \underline{-1225} \\
 0
 \end{array}$$

So, the square root of 156.25 is 12.5.



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Sol'n 7

$$(ii) \sqrt{4\frac{73}{324}}$$

$$= \sqrt{\frac{1369}{324}}$$

$$= \frac{37}{18} = 2\frac{1}{18}$$

$$\begin{array}{r} 37 \\ 3 \overline{) 1369} \\ \underline{-9} \\ 469 \\ \underline{-469} \\ 0 \end{array}$$

Sol'n 11

(ii)

$$\sqrt{\frac{48.4}{0.289}}$$

$$= \sqrt{\frac{484}{10} \times \frac{100}{289}}$$

$$= \sqrt{\frac{484 \times 100}{289}}$$

$$= \frac{22 \times 10}{17} = \frac{220}{17}$$

Exercise - 3E

Sol'n: (i) Cube of $\frac{2}{5} = \left(\frac{2}{5}\right)^3 = \frac{8}{125}$

Viii) Cube of $1\frac{3}{5} = \left(\frac{8}{5}\right)^3 = \frac{512}{125}$

Sol'n 2. v) $\sqrt[3]{9261}$

$$= \sqrt[3]{3 \times 3 \times 3 \times 7 \times 7 \times 7}$$

$$= 3 \times 7$$

$$= 21$$

$$\begin{array}{r} 3 \overline{) 9261} \\ \underline{3} 087 \\ \underline{3} 1029 \\ \underline{7} 343 \\ \underline{7} 49 \\ \underline{7} 7 \\ 1 \end{array}$$

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