Cubes and Cubes Roots Ex 4.3 Q2

Answer :

(i)

We have:

$$\begin{array}{r} 130 \\ -\ 1 \\ \hline 129 \\ -\ 7 \\ \hline 122 \\ -\ 19 \\ \hline 103 \\ -\ 37 \\ \hline 66 \\ -\ 61 \\ \hline 5 \end{array}$$

$\because$ The next number to be subtracted is 91, which is greater than 5.

$\therefore$ 130 is not a perfect cube.

(ii)
We have:

$$
\begin{array}{r}
345 \\
\underline{\quad 1} \\
344 \\
\underline{\quad 7} \\
337 \\
\underline{\quad 19} \\
318 \\
\underline{\quad 37} \\
281 \\
\underline{\quad 61} \\
220 \\
\underline{\quad 91} \\
129 \\
\underline{\quad 127} \\
2
\end{array}
$$

$\because$ The next number to be subtracted is 161, which is greater than 2.

$\therefore$ 345 is not a perfect cube.

(iii)

We have:

$$
\begin{array}{r}
792 \\
\quad 1 \\
\hline
791 \\
\quad 7 \\
\hline
784 \\
\quad 19 \\
\hline
765 \\
\quad 37 \\
\hline
728 \\
\quad 61 \\
\hline
667 \\
\quad 91 \\
\hline
576 \\
\quad 127 \\
\hline
449
\end{array}
$$

$$\begin{array}{r} 169 \\ \hline 280 \\ 217 \\ \hline 63 \end{array}$$

$\because$ The next number to be subtracted is 271, which is greater than 63.

$\therefore$ 792 is not a perfect cube.

(iv)
We have:

$$\begin{array}{r} 1331 \\ 1 \\ \hline 1330 \\ 7 \\ \hline 1323 \\ 19 \\ \hline 1304 \\ 37 \\ \hline 1267 \end{array}$$

$$
\begin{array}{r}
61 \\
\hline
1206 \\
91 \\
\hline
1115 \\
127 \\
\hline
988 \\
169 \\
\hline
819 \\
217 \\
\hline
602 \\
271 \\
\hline
331 \\
331 \\
\hline
0
\end{array}
$$

$\because$ The subtraction is performed 11 times.

$\therefore \sqrt[3]{1331} = 11$

Thus, 1331 is a perfect cube.

********** END **********