



EXERCISE 6.4

Steps of Long Division Method for Finding Square Roots:

Step I: Group the digits in pairs, starting with the digit in the units' place. Each pair and the remaining digit (if any) is called a period.

Step II: Think of the largest number whose square is equal to or just less than the first period. Take this number as the divisor and also as the quotient.

Step III: Subtract the product of the divisor and the quotient from the first period and bring down the next period to the right of the remainder. This becomes the new dividend.

Step IV: Now, the new divisor is obtained by taking two times the quotient and annexing with it a suitable digit which is also taken as the next digit of the quotient, chosen in such a way that the product of the new divisor and this digit is equal to or just less than the new dividend.

Step V: Repeat steps (2), (3) and (4) till all the periods have been taken up. Now, the quotient so obtained is the required square root of the given number.

Examples on square root of a perfect square by using the long division method

Q. Find the square root of 5329 by the long-division method.

$\begin{array}{r} 7 \\ 7 \overline{) 53\ 29} \\ \underline{7} \\ \end{array}$ <p>Step -1</p>	$\begin{array}{r} 7 \\ 7 \overline{) 53\ 29} \\ \underline{+7} \\ 14 \\ \underline{14} \\ \end{array}$ <p>step -2</p>	$\begin{array}{r} 73 \\ 7 \overline{) 53\ 29} \\ \underline{+7} \\ 143 \\ \underline{143} \\ \\ \end{array}$ <p>Step -3</p>
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$\begin{array}{r} 73 \\ 7 \overline{) 53\ 29} \\ \underline{+7} \\ 143 \\ \underline{+3} \\ 146 \\ \end{array}$ <p>Step - 4</p>
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Hence, $\sqrt{5329} = 73$ **Ans.**



1. Find the square root of each of the following numbers by Division method.

(i) 2304

(ii) 448

(iii) 3481

(iv) 529

(v) 3249

(vi) 1369

(vii) 5776

(viii) 7921

(ix) 576

(x) 1024

(xi) 3136

(xii) 900

Solution Q. (i) 2304

	4 8
4	<u>23</u> <u>04</u>
+4	- 16
88	704
+ 8	-704
96	0

Square root of 2304 = 48 Ans.

Do Your Self

Remaining Questions