



## Provincial Department of Education

Subject –

Week : 2

Grade 10

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## 2 .Square root

Square root of a positive number

Number	How the square of a number is obtained	How the square of the number is denoted	Square of the number
1	$1 \times 1$	$1^2$	1
2	$2 \times 2$	$2^2$	4
3	$3 \times 3$	$3^2$	9
4	$4 \times 4$	$4^2$	16
5	$5 \times 5$	$5^2$	25

Finding the square root of a number using first approximation

Approximate  $\sqrt{7}$  to the first decimal place

- Write two consecutive perfect squares for  $\sqrt{7}$   
 $\sqrt{4} < \sqrt{7} < \sqrt{9}$

- Write their square roots

$$2 < \sqrt{7} < 3$$

- Write all decimal numbers between 2 and 3 in ascending order.

$$2, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3$$

- To find the value of  $\sqrt{7}$ , you will square the following numbers.

$$2.1 \times 2.1 =$$

$$2.2 \times 2.2 =$$

⋮

$$2.6 \times 2.6 = 6.76$$

$$2.7 \times 2.7 = 7.29$$

- Among 6.76 and 7.29, 6.76 is closer to 7. Therefore  $\sqrt{7} = 2.6$ .

Do the exercise 2.1

**Finding the square root using Division method:-**

Find the square root of 576

Step 1

Separate 576 as shown below, by grouping the digits of 576 in pairs, starting from the units position and proceeding towards the left. 5 76

step 2

Find the perfect square number which is closest to the leftmost digit or pair of digits of the separated number, and as indicated below, write its square root above and to the left of the drawn lines

$$\begin{array}{r} 2 \\ 2 \overline{) 5,76} \end{array}$$

Write down the product 2 x 2 of the number above and to the left of the lines, below the number 5 as indicated, and subtract it from 5

$$\begin{array}{r} 2 \\ 2 \overline{) 5,76} \\ \underline{4} \\ 1 \end{array}$$

Now carry down the next two digits 76, as indicated below.

$$\begin{array}{r} 2 \\ 2 \overline{) 5,76} \\ \underline{4} \downarrow \\ 176 \end{array}$$

write on the left as shown below, the digit 4, which is two times the number above the line.(2×2)

$$\begin{array}{r} 2 \\ 2 \overline{) 5,76} \\ \underline{4} \\ 4 \overline{) 176} \\ \underline{176} \\ 0 \end{array}$$

The same digit should be written above the line to the right of 2 and in the space left in the units position on the left. This digit should be selected so that the product of this digit and the number obtained on the left when this digit is written in the units position (in this case 44), is equal to 176, or is the closest number less than 176 that can be obtained in this manner

$$\begin{array}{r} 2 \boxed{4} \\ 2 \overline{) 5,76} \\ \underline{4} \\ 4 \overline{) 176} \\ \underline{176} \\ 0 \end{array}$$

$$\therefore \sqrt{576}$$

Do the exercise 2.2 and 2.3