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SQUARES AND SQUARE ROOTS

PERIOD 2

SUBJECT : MATHEMATICS
CHAPTER NUMBER: 3
CHAPTER NAME : SQUARES AND SQUARE ROOTS

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Learning outcome

Students will be able to understand the properties of square number.

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Properties of square numbers

https://www.youtube.com/watch?v=yMrXa_0TcDs (3:32)

Evaluation Questions

Ex 3C

1 .(v) Seeing the value of the digit at unit's place, state which of the following can be square of a number 50699

Sol: We know that a Square number can only end with digits 0, 1, 4, 5, 6, 9.

So, 50699 can be square of a number.

Question 7.

If the square of a number ends with 10 zeroes, how many zeroes will the number have?

Sol: The **number of zeros at the end** of a perfect **square** is always even.

2.(ii)

	23.06
2	531.7636
	4
43	131
	129
4606	2.7636
	2.7636
	x

Required square root =23.06

Exercise-3(B)

(*iv*) 0.2916

	0.54
0.5	0.2916
	0.25
0.104	416
	416
	×

Required square root = 0.54

(*v*) 0.001225

	0.035
0.03	0.001225
	9
0.065	325
	325
	×

Required square root = 0.035

(*vi*) 0.023104

	0.152
0.1	0.023104
	0.01
.25	131
	125
.302	604
	604
	×

$\sqrt{7} = 2.645 = 2.65$

	2.645
2	7.00 00 00
	4
46	300
	276
524	2400
	2096
5285	30400
	26425
	3975

Now, $\sqrt{\dfrac{4+\sqrt{7}}{4-\sqrt{7}}}$

$$= \sqrt{\frac{(4+\sqrt{7})(4+\sqrt{7})}{(4-\sqrt{7})(4+\sqrt{7})}}$$

$$= \sqrt{\frac{(4+\sqrt{7})^2}{(4)^2-(\sqrt{7})^2}}$$

$$= \sqrt{\frac{(4+\sqrt{7})^2}{16-7}} = \sqrt{\frac{(4+\sqrt{7})^2}{9}}$$

$$= \frac{4+\sqrt{7}}{3} = \frac{4+2.65}{3} = \frac{6.65}{3} = 2.22$$

Square root of decimal

https://www.youtube.com/watch?v=tRHLEWSUjrQ (3:03)

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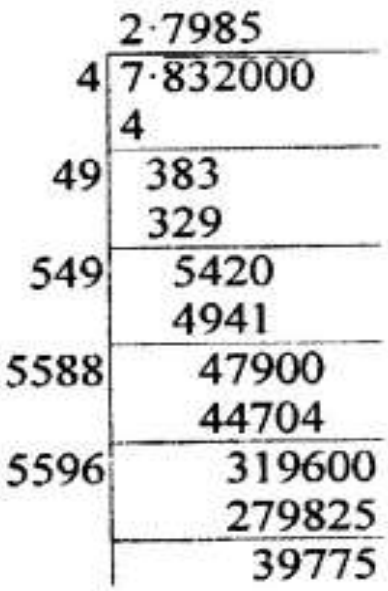
Exercise-3(B)

10)

Square root of 7.832



$\sqrt{7.832}$ = 2.80 upto two decimal places

= 2.8 upto two significant places

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11) Find the least number which must be subtracted from 1205 so that the resulting number is a perfect square.

Sol:

Clearly, if 49 is subtracted from 1205, the number will be a perfect square.

$$
\begin{array}{r|l}
 & 34 \\
\hline
3 & 1205 \\
 & 9 \\
\hline
64 & 305 \\
 & 256 \\
\hline
 & 49
\end{array}
$$

$\therefore$ $1205 - 49 = 1156$ and $\sqrt{1156} = 34$

12)Find the least number which must be added to 1205 so that the resulting number is a perfect square.

Sol:

Clearly, 1205 is greater than 34^2

$$
\begin{array}{r|l}
 & 34 \\
\hline
3 & 1205 \\
 & 9 \\
\hline
64 & 305 \\
 & 256 \\
\hline
 & 49
\end{array}
$$

$\therefore$ On adding the required number to 1205, we shall be getting 35^2 *i.e.*, 1225

$\therefore$ The required number $= 1225 - 1205 = 20$

Home assignment

Exercise 3(B) -1 to 6

1. **Find the side of a square, whose area is equal to the area of a rectangle with sides 6.4m and 2.5m.**
2. **Find the number of plants in each row, if 1024 plants are arranged, so that number of plants in a row is the same as the number of rows.**
3. **A hall has a capacity of 2704 seats. If the number of rows is equal to the number of seats in each row, then find the number of seats in each row.**

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THANKING YOU

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