FREE NCERT SOLUTIONS

CLASS - 8

SQUARES AND SQUARE ROOTS



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EXERCISE 6.1 - Question No. 1

What will be the unit digit of the squares of the following numbers? (i)

81 (ii) 272 (iii) 799 (iv) 3853 (v) 1234 (vi) 26387 (vii) 52698 (viii)

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EXERCISE 6.1 - Question No. 2

99880 (ix) 12796 (x) 55555

The following numbers are obviously not perfect squares. Give reason.

(i) 1057 (ii) 23453 (iii) 7928 (iv) 222222 (v) 64000 (vi) 89722 (vii)

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EXERCISE 6.1 - Question No. 3

The squares of which of the following would be odd numbers? (i) 431

(ii) 2826 (iii) 7779 (iv) 82004

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EXERCISE 6.1 - Question No. 4

Observe the following pattern and find the missing digits.

 $11^2 = 121101^2 = 102011001^2 = 1002001100001^2 = 12110000001^2$



EXERCISE 6.1 - Question No. 6

Using the given pattern, find the missing numbers.

$$1^2 + 2^2 + 2^2 = 3^2 2^2 + 3^2 + 6^2 = 7^2 3^2 + 4^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 + 12^2 = 13^2 4^2 + 5^2 + 12^2 + 1$$

 $= 32^{2}6^{2} + 7^{2} + [\ \ \ \ ?\]^{2} = [\ \ \ \ ?\]^{2} = [\ \ \ \ ?\][\ \ \ \ \ ?\]^{2}$ Watch Free Video Solution on Doubtnut Now

EXERCISE 6.1 - Question No. 7

Without adding, find the sum, (i) 1 + 3 + 5 + 1

Without adding, find the sum. (i)
$$1 + 3 + 5 + 7 + 9$$
 (ii) $1 + 3 + 5 + 7 + 9 + l1 + 13 + 15 + 17 + 19$



(i) Express 49 as the sum of 7 odd numbers. (ii) Express 121 as the sum of 11 odd numbers.

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EXERCISE 6.1 - Question No. 9

12 and 13 (ii) 25 and 26 (iii) 99 and 100

How many numbers lie between squares of the following numbers? (i)



(v) 71 (vi) 46

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Find the square of the following numbers. (i) 32 (ii) 35 (iii) 86 (iv) 93

EXERCISE 6.2 - Question No. 2

Write a Pythagorean triplet whose one member is. (i) 6 (ii) 14 (iii) 16

EXERCISE 6.3 - Question No. 1

(iv) 18

What could be the possible ones digits of the square root of each of the

following numbers? (i) 9801 (ii) 99856 (iii) 998001 (iv) 657666025



Without doing any calculation, find the numbers which are surely not perfect squares. (i) 153 (ii) 257 (iii) 408 (iv) 441

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EXERCISE 6.3 - Question No. 3

Find the square roots of 100 and 169 by the method of repeated subtraction.

Find the square roots of the following numbers by the Prime

Factorisation Method. (i) 729 (ii) 400 (iii) 1764 (iv) 4096 (v) 7744 (vi)

9604 (vii) 5929 (viii) 9216 (ix) 529 (x) 8100

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EXERCISE 6.3 - Question No. 5

For each of the following numbers, find the smallest whole number by which it should be multiplied so as to get a perfect square number.

Also find the square root of the square number so obtained. (i) 252 (ii)

180 (iii) 1008 (iv) 2028 (v) 1458 (vi) 768



which it should be divided so as to get a perfect square. Also find the square root of the square number so obtained. (i) 252 (ii) 2925 (iii) 396 (iv) 2645 (v) 2800 (vi) 1620

For each of the following numbers, find the smallest whole number by

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EXERCISE 6.3 - Question No. 7

The students of Class VIII of a school donated Rs 2401 in all, for

Prime Ministers National Relief Fund. Each student donated as many
rupees as the number of students in the class. Find the number of
students in the class.



2025 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows and the number of plants in each row.

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EXERCISE 6.3 - Question No. 9

Find the smallest square number that is divisible by each of the numbers 4, 9 and 10.

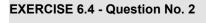


Find the smallest square number that is divisible by each of the numbers 8, 15 and 20.

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EXERCISE 6.4 - Question No. 1

Find the square root of each of the following numbers by Division method. (i) 2304 (ii) 4489 (iii) 3481 (iv) 529 (v) 3249 (vi) 1369 (vii) 5776 (viii) 7921 (ix) 576 (x) 1024 (xi) 3136 (xii) 900



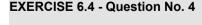
Find the number of digits in the square root of each of the following numbers (without any calculation). (i) 64 (ii) 144 (iii) 4489 (iv) 27225 (v) 390625

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EXERCISE 6.4 - Question No. 3

Find the square root of the following decimal numbers. (i) 2.56 (ii)

7.29 (iii) 51.84 (iv) 42.25 (v) 31.36



Find the least number which must be subtracted from each of the following numbers so as to get a perfect square. Also find the square root of the perfect square so obtained. (i) 402 (ii) 1989 (iii) 3250 (iv) 825 (v) 4000

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EXERCISE 6.4 - Question No. 5

Find the least number which must be added to each of the following numbers so as to get a perfect square. Also find the square root of the perfect square so obtained. (i) 525 (ii) 1750 (iii) 252 (iv) 1825 (v) 6412

Find the length of the side of a square whose area is $441m^2$.

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EXERCISE 6.4 - Question No. 7

find AC (b) If AC=13cm,BC, find AB.

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EXERCISE 6.4 - Question No. 8

A gardener has 1000 plants. He wants to plant these in such a way that

In a right triangle ABC, $\langle B = 90^{\circ}$ (a) If Ab = 6cm, BC = 8cm,

the number of rows and the number of columns remain same. Find the

minimum number of plants he needs more for this.



EXERCISE 6.4 - Question No. 9

There are 500 children in a school. For a P.T. drill they have to stand in such a manner that the number of rows is equal to number of columns.

How many children would be left out in this arrangement.

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Find the square of the following numbers without actual

SOLVED EXAMPLES - Question No. 1

multiplication. (i) 39 (ii) 42

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SOLVED EXAMPLES - Question No. 2

Write a Pythagorean triplet whose smallest member is 8.

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SOLVED EXAMPLES - Question No. 3

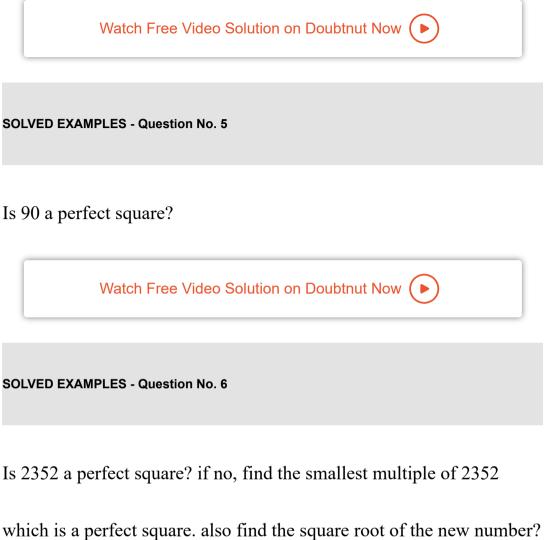
Find a Pythagorean triplet in which one member is 12.

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SOLVED EXAMPLES - Question No. 4

Find the square root of 6400.



which is a perfect square. also find the square root of the new number?

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SOLVED EXAMPLES - Question No. 7

Find the smallest number by which 9408 must be divided so that the quotient is a perfect square. Find the square root of the quotient.

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SOLVED EXAMPLES - Question No. 8

Find the smallest square number which is divisible by each of the numbers 6, 9 and 15.

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SOLVED EXAMPLES - Question No. 9

Find the square root of: (i) 729 (ii) 1296



SOLVED EXAMPLES - Question No. 10

Find the least number that must be subtracted from 5607 so as to get a perfect square. Also find the square root of the perfect square. find the greatest 4 digit number which is a perfect square.

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SOLVED EXAMPLES - Question No. 11

Find the greatest 4-digit number which is a perfect square.

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SOLVED EXAMPLES - Question No. 12

Find the least number that must be added to 1300 so as to get a perfect square. Also find the square root of the perfect square.

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SOLVED EXAMPLES - Question No. 13

Find the square root of 12.25.

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SOLVED EXAMPLES - Question No. 14

Area of a square plot is $2304m^2$. Find the side of the square plot.



SOLVED EXAMPLES - Question No. 15

There are 2401 students in a school. P.T. teacher wants them to stand in rows and columns such that the number of rows is equal to the number of columns. Find the number of rows.

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