



MATHS

NCERT - NCERT MATHEMATICS(ENGLISH)

SQUARES AND SQUARE ROOTS

Exercise 6 3

1. 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.

A. 44

B. 46

C. 45

D. 40

Answer: *C*



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



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



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4. The students of Class VIII of a school donated Rs 2401 in all, for Prime Minister's 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.

A. 64

B. 49

C. 36

D. 69

Answer: *B*



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5. 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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6. 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

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

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9. What could be the possible 'one's' digits of the square root of each of the following numbers? (i) 9801 (ii) 99856 (iii) 998001
(iv) 657666025



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



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Solved Examples

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

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3. 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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4. Find the square root of 12.25.

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

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



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



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9. 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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10. Is 2352 a perfect square? if no, find the smallest multiple of 2352 which is a perfect square. also find the square root of the new number?

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11. Is 90 a perfect square?

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12. Find the square root of 6400.

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13. Find a Pythagorean triplet in which one member is 12.

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14. Write a Pythagorean triplet whose smallest member is 8.

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15. Find the square of the following numbers without actual multiplication.(i) 39 (ii) 42

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Exercise 6 2

1. Write a Pythagorean triplet whose one member is.

(i) 6

(ii) 14

(iii) 16

(iv) 18

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2. Find the square of the following numbers.(i) 32

(ii) 35

(iii) 86

(iv) 93(v) 71

(vi) 46



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Exercise 6 1

1. Observe the following pattern and find the missing digits.

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



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2. Observe the following pattern and supply the missing numbers.

$$11^2 = 121101^2 = 1020110101^2 = 1020302011010101^2 = \dots\dots\dots 2 = 10203040$$



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3. Using the given pattern, find the missing numbers.

$$1^2 + 2^2 + 2^2 = 3^2 2^2 + 3^2 + 6^2 = 7^2 3^2 + 4^2 + 12^2 = 13^2 4^2 + 5^2 + [_ ?]^2 =$$

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4. Without adding, find the sum. (i) $1 + 3 + 5 + 7 + 9$ (ii)

$$1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19$$

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5. 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) 99880 (ix) 12796 (x) 55555

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

(i) 1057

(ii) 23453

(iii) 7928

(iv) 222222(v)

64000

(vi) 89722

(vii) 222000

(viii) 505050



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

431

(ii) 2826

(iii) 7779

(iv) 82004



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



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

12 and 13

(ii) 25 and 26

(iii) 99 and 100



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Exercise 6 4

1. 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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2. A gardener has 1000 plants. He wants to plant these in such a way that the number of rows and the number of columns remain same. Find the minimum number of plants he needs more for this.

A. 25

B. 24

C. 26

D. 21

Answer: *B*



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3. In a right triangle ABC , $\angle B = 90^\circ$

(a) If $AB = 6\text{cm}$, $BC = 8\text{cm}$, find AC

(b) If $AC = 13\text{cm}$, $BC = 5\text{cm}$, find AB .



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



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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



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6. 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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7. Find the square root of the following decimal numbers.

(i) 2.56

(ii) 7.29

(iii) 51.84

(iv) 42.25

(v) 31.36



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8. 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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9. Find the square root of each of the following numbers by Division method. (i) 2304 (ii) 4489 (iii) 3481



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