MATHS

BOOKS - SWAN PUBLICATION

SQUARES AND SQUARE ROOTS

Try These

1. Find the perfect square numbers between:

30 and 40.

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2. Find the perfect square numbers between: 50 and 60.

3. Can we say whether the following numbers are perfect squares ? How do we know ?

1057

4. Can we say whether the following numbers are perfect squares ? How do we know ?

23453

5. Can we say whether the following numbers are perfect squares ? How do we know ?

7928

6. Can we say whether the following numbers are perfect squares ? How do we know ?

222222

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7. Can we say wether the following numbers are perfect squares ?How do we know?

1069

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8. Can we say wether the following numbers are perfect squares ?How do we know?

2061

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9. Write five numbers which you cannot decide just by looking at their unit's digit(or one's place) whether they are square numbers or not.

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10. Write the next two square numbers after 441 which end in 1 and their corresponding numbers.

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11. $(123)^2, (77)^2, (82)^2, (161)^2, (109)^2$.Which would end with digit 1 ?

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12. Which of the following numbers would have digit 6 at unit place ?

19^2

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13. Will the following number would have digit 6 at unit place ?

24^2

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14. Which of the following numbers would have digit 6 at unit place ?

26^2

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15. Which of the following numbers would have digit 6 at unit place ?

36^2

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16. Which of the following numbers would have digit 6 at unit place ?

34^2

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17. What will be the "one's digit" in the square of the following numbers ?

1234

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18. What will be the "one's digit" in the square of the following numbers ?

26387

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19. What will be the "one's digit" in the square of the following numbers ?

52698

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20. What will be the "one's digit" in the square of the following numbers ?

99880

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21. What will be the "one's digit" in the square of the following numbers ?

21222

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22. What will be the "one's digit" in the square of the following numbers ?

9106

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23. If a number contains 3 zeroes at the end, how many zeros will its square have ? What do you notice about the number of zeros at the end of the number and the number of zeros at the end of its square ?

Can we say that square numbers can only have even number of zeros at the end ?

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24. If a number contains 3 zeroes at the end, how many zeros will its square have ? What do you notice about the number of zeros at the end of the number and the number of zeros at the end of its square ?

Can we say that square numbers can only have even number of zeros at the end ?

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25. If a number contains 3 zeroes at the end, how many zeros will its square have ? What do you notice about the number of zeros at the end of the number and the number of zeros at the end of its square ?

Can we say that square numbers can only have even number of zeros at the end ?


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26. What can you say about the squares of even number and squares of odd numbers.

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27. The square of which of the following would be an odd number/an even number?Why?

727

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28. The square of which of the following would be an odd number/an even number?Why?

158

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29. The square of which of the following would be an odd number/an even number?Why?

269

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30. The square of which of the following would be an odd number/an even number?Why?

1980

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31. What will be the number of zeroes in the square of the following numbers?

60

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32. What will be the number of zeroes in the square of the following numbers?

400

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33. How many natural numbers lies between 9^2 and 10^2?

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34. How many non-square numbers lie between the following pairs of numbers.

$(100)^2$ and $(101)^2$.

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35. How many non-square numbers lie between the following pairs of numbers.

$(90)^2$ and $(91)^2$

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36. How many non-square numbers lie between the following pairs of numbers.

$(1000)^2$ and $(1001)^2$.

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37. Find whether each of the following numbers is a perfect square or not.

121

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38. Find whether each of the following numbers is a perfect square or not.

55

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39. Find whether each of the following numbers is a perfect square or not.

81

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40. Find whether each of the following numbers is a perfect square or not ?

49

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41. Find whether each of the following numbers is a perfect square or not.

69

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42. Express the following as the sum of two consecutive integers.

`(21)^2

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43. Express the following as the sum of two consecutive integers.

$(13)^2$.

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44. Express the following as the sum of two consecutive integers.

$(11)^2$.

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45. Express the following as the sum of two consecutive integers.

$(19)^2$.

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46. Do you think the reverse is also true,i.e,is the sum of any two consecutive positive integers a perfect square of a number ?Give examle to support your answer.

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47. Find the squares of the following numbers

15.

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48. Write the square making use of above pattern:

111111^2.

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49. Write the square making use of above pattern:

1111111^2.

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50. Can you find the square of the following numbers using the above pattern:

6666667^2.

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51. Can you find the square of the following numbers using the above pattern:

6666667^2.

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52. Find the squares of the following numbers containing 5 in unit's place

15

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53. Find the squares of the following numbers containing 5 in unit's place.

95

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54. Find the squares of the following numbers containing 5 in unit's place.

105

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55. Find the saquares of the following numbers containing 5 in unit's place.

205

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56. $11^2 = 121$. What is the square root of 121.

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57. $14^2 = 196$.What is the square root of 196.

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58. By repeater subtracion of odd numbers from 1,find whether the following numbers are perfect squares or not?If the number is a

perfect squar,then,find its square root.

121

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59. By repeated subtraction of odd numbers starting from 1, find whether the following numbres are perfect squares or not ? It the number is a perfect square then find its square root.

55

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60. By repeated subtraction of odd numbers starting from 1, find whether the following numbres are perfect squares or not ? It the number is a perfect square then find its square root.

36

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61. By repeated subtraction of odd numbers from 1,find whether the following numbers are

perfect squares or not?If the number is a perfect squar,then,find its square root.

49

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62. By repeater subtracion of odd numbers from 1,find whether the following numbers are perfect squares or not?If the number is a perfect squar,then,find its square root.

90

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63. Without calculatig square roots,find the number of digits in the square root of the following numbers.

25600.

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64. Without calculatig square roots,find the number of digits in the square root of the following numbers.

100000000

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65. Without calculatig square roots,find the number of digits in the square root of the following numbers.

36864

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66. Estimate the value of the following to the nearest whole number.

$\sqrt{80}$

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67. Estimate the value of the following to the nearest whole number.

$\sqrt{1000}$

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68. Estimate the value of the following to the nearest whole number.

$\sqrt{350}$

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69. Estimate the value of the following to the nearest whole number.

$\sqrt{500}$

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Think Discuss And Write

1. $(-9)^2 = 81$. Is -9 a square root of 81?

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2. Can we say that if a perfect square is of n digits, then its square root will have $\frac{n}{2}$ digits if n is even or $\left(\frac{n+1}{2}\right)$ if n is odd ?

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Exercise 6 1

1. What will be the unit digit of the squares of the following numbers : 81

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2. What will be the unit digit of the squares of the following numbers : 272

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3. What will be the unit digit of the squares of the following numbers : 799

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4. What will be the unit digit of the squares of the following numbers : 3853

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5. What will be the unit digit of the squares of the following numbers : 1234

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6. What will be the unit digit of the squares of the following numbers : 26387

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7. What will be the unit digit of the squares of the following numbers ?

52698

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8. What will be the unit digit of the squares of the following numbers : 99880

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9. What will be the unit digit of the squares of the following numbers : 12796

10. What will be the unit digit of the squares of the following numbers : 55555

11. The following numbers are obviously not perfect squares. Give reason : 1057

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12. The following numbers are obviously not perfect squares. Give reason : 23453

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13. The following numbers are obviously not perfect squares. Give reason : 7928

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14. The following numbers are obviously not perfect squares. Give reason : 222222

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15. The following numbers are obviously not perfect squares. Give reason : 64000

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16. The following numbers are obviously not perfect squares. Give reason : 89722

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17. The following numbers are obviously not perfect squares. Give reason : 222000

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18. The following numbers are obviously not perfect squares. Give reason : 505050

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19. The squares of which of the following would be odd numbers : 431

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20. The squares of which of the following would be odd numbers : 2826

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21. The squares of which of the following would be odd numbers : 7779

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22. The squares of which of the following would be odd numbers : 82004

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23. Observe the following pattern and find the missing digits:

$11111^2 = 1. .3. .5. .3. .1.$

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24. Observe the following pattern and supply the missing numbers:

$10101^2 = 102030201.$

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

$1^2 + 2^2 + 2^2 = 3^2$

$2^2 + 3^2 + 6^2 = 7^2$

$3^2 + 4^2 + 12^2 = 13^2$

$4^2 + 5^2 + \ldots^2 = 21^2$

$5^2 + \ldots.^2 + 30^2 = 31^2$

$6^2 + 7^2 + \ldots\ldots^2 = \ldots\ldots\ldots^2$

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26. Without adding ,find the sum :

1+3+5+7+9.

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27. Express 49 as the sum of 7 odd numbers.

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28. How many numbers lie between squares of the following numbers: 12 and 13

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29. How many numbers lie between squares of the following numbers: 25 and 26

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30. How many numbers lie between squares of the following numbers: 99 and 100

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Exercise 6 2

1. Find the square of the following numbers :

32

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2. Find the square of the following numbers :

35

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3. Find the square of the following numbers :

86

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4. Find the square of the following numbers :

93

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5. Find the square of the following numbers :

71

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6. Find the square of the following numbers :

46

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7. Write a Pythagorean triplet whose one member is : 6

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8. Write a Pythagorean triplet whose one member is : 14

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9. Write a Pythagorean triplet whose one member is : 16

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10. Write a Pythagorean triplet whose one member is : 18

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Exercise 6 3

1. What could be the possible 'one's' digits of the square root of each of the following numbers: 9801

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2. What could be the possible 'one's' digits of the square root of each of the following numbers: 99856

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3. What could be the possible 'one's' digits of the square root of each of the following numbers: 998001

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4. What could be the possible 'one's' digits of the square root of each of the following numbers: 657666025

5. Without doing any calculation, find the numbers which are surely not perfect squares: 153

6. Without doing any calculation, find the numbers which are surely not perfect squares:

257

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7. Without doing any calculation, find the numbers which are surely not perfect squares:

408

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8. Without doing any calculation, find the numbers which are surely not perfect squares:

441

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

10. Find the square roots of the following numbers by the Prime Factorisation Method: 729

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11. Find the square roots of the following numbers by the Prime Factorisation Method: 400

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12. Find the square roots of the following numbers by the Prime Factorisation Method: 1764

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13. Find the square roots of the following numbers by the Prime Factorisation Method: 4096

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14. Find the square roots of the following numbers by the Prime Factorisation Method: 7744

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15. Find the square roots of the following numbers by the Prime Factorisation Method: 9604

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16. Find the square roots of the following numbers by the Prime Factorisation Method: 5929

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17. Find the square roots of the following numbers by the Prime Factorisation Method: 9216

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18. Find the square roots of the following numbers by the Prime Factorisation Method: 529

19. Find the square roots of the following numbers by the Prime Factorisation Method:8100

20. 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: 252

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21. 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: 180

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22. 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: 1008

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23. 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: 2028

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24. 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: 1458

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25. 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: 768

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26. 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: 252

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27. 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: 2925

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28. 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: 396

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29. 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: 2645

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30. 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: 2800

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31. 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: 1620

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32. 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.

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

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

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Exercise 6 4

1. Find the square root of each of the following numbers by Division method: 2304

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2. Find the square root of each of the following numbers by Division method: 4489

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3. Find the square root of each of the following numbers by Division method: 3481

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4. Find the square root of each of the following numbers by Division method: 529

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5. Find the square root of each of the following numbers by Division method: 3249

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6. Find the square root of each of the following numbers by Division method: 1369

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7. Find the square root of each of the following numbers by Division method: 5776

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8. Find the square root of each of the following numbers by Division method: 7921

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9. Find the square root of each of the following numbers by Division method: 576

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10. Find the square root of each of the following numbers by Division method: 1024

11. Find the square root of each of the following numbers by Division method: 3136

12. Find the square root of each of the following numbers by Division method: 900

13. Find the number of digits in the square root of each of the following numbers (without any calculation): 64

14. Find the number of digits in the square root of each of the following numbers (without any calculation): 144

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15. Find the number of digits in the square root of each of the following numbers (without any calculation): 4489

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16. Find the number of digits in the square root of each of the following numbers (without any calculation): 27225

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17. Find the number of digits in the square root of each of the following numbers (without any calculation): 390625

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18. Find the square root of the following decimal numbers: 2.56

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19. Find the square root of the following decimal numbers: 7.29

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20. Find the square root of the following decimal numbers: 51.84

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21. Find the square root of the following decimal numbers: 42.25

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22. Find the square root of the following decimal numbers: 31.36

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23. 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: 402

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24. 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: 1989

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25. 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: 3250

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26. 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: 825

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27. 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: 4000

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28. 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 : 525

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29. 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 : 1750

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30. 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 : 252

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31. 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 : 1825

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32. 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 : 6412

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

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34. In a right triangle ABC,$\angle B = 90^\circ$: If AB = 6 cm, BC = 8 cm, find AC

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35. In a right triangle ABC, $\angle B = 90^\circ$: If AC = 13 cm, BC = 5 cm, find AB

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36. 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.

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37. 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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