MATHS

BOOKS - ASHOK PUBLICATION ASSAM

Squares and Square Roots

Example

1. What will be the unit digit of the square of the following numbers?

81

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2. What will be the unit digit of the square of the following numbers?

272

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3. What will be the unit digit of the square of the following numbers?

799

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4. What will be the unit digit of the square of the following numbers?

3853

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5. What will be the unit digit of the square of the following numbers?

1234

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6. What will be the unit digit of the square of the following numbers?

26387

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

52698

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8. What will be the unit digit of the square of the following numbers?

99880

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9. What will be the unit digit of the square of the following numbers?

12796

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10. What will be the unit digit of the square of the following numbers?

55555

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11. The following numbers are obviously not perfect squares. Give reasons.

1057

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12. The following numbers are obviously not perfect squares. Give reasons.

23453

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13. The following numbers are obviously not perfect squares. Give reasons.

7928

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14. The following numbers are obviously not perfect squares. Give reasons.

222222

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15. The following numbers are obviously not perfect squares. Give reasons.

64000

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16. The following numbers are obviously not perfect squares. Give reasons.

89722

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17. The following numbers are obviously not perfect squares. Give reasons.

222000

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18. The following numbers are obviously not perfect squares. Give reasons.

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 supply the missing numbers:

11^2 = 121

101^2 = 10201

10101^2 = 102030201

1010101^2 = ...

..... = 10203040504030201

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24. Using the given pattern, find the missing numbers:

$$
\begin{aligned}
1^2+2^2+2^2 &= 3^2 \\
2^2+3^2+6^2 &= 7^2 \\
3^2+4^2+12^2 &= 13^2 \\
4^2+5^2+\ldots\ldots^2 &= 21^2 \\
5^2+\ldots\ldots^2+30^2 &= 31^2 \\
6^2+7^2+\ldots\ldots^2 &= \ldots\ldots^2
\end{aligned}
$$

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25. Without adding, find the sum:

$1+3+5+7+9$

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26. Without adding, find the sum:

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

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27. Without adding, find the sum:

$1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 + 23$

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

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29. Express 121 as the sum of 11 odd numbers.

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30. How many numbers lie between squares of the following numbers?

12 and 13

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31. How many numbers lie between squares of the following numbers?

25 an 26

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32. How many numbers lie between squares of the following numbers?

99 and 100

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33. Find the square of the following numbers:

32

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34. Find the square of the following numbers:

35

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35. Find the square of the following numbers:

86

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36. Find the square of the following numbers:

93

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37. Find the square of the following numbers:

71

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38. Find the square of the following numbers:

46

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39. Write a Pythagorean triplet whose one member is

6

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40. Write a Pythagorean triplet whose one member is

14

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41. Write a Pythagorean triplet whose one member is

16

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42. Write a Pythagorean triplet whose one member is 18

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

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44. What could be the possible one's digits of the squares root of each of the following numbers:

99856

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45. What could be the possible one's digits of the squares root of each of the following numbers:

998001

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46. What could be the possible one's digits of the squares root of each of the following numbers:

657666025

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47. Without any calculation, find the numbers which are not perfect squares :

153

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48. Without any calculation, find the numbers which are not perfect squares :

257

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49. Without any calculation, find the numbers which are not perfect squares :

408

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50. Without any calculation, find the numbers which are not perfect squares :

441

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51. Find the square root of 100 by the method of repeated subtraction.

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52. Find the square root of 169 by the method of repeated subtraction.

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53. Find the square roots of the following numbers by Prime factorisation method ,

729

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54. Find the square roots of the following numbers by Prime factorisation method ,

400

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55. Find the square roots of the following numbers by Prime factorisation method ,

1764

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56. Find the square roots of the following numbers by Prime factorisation method ,

4096

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57. Find the square roots of the following numbers by Prime factorisation method ,

7744

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58. Find the square roots of the following numbers by Prime factorisation method ,

9604

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59. Find the square roots of the following numbers by Prime factorisation method ,

5929

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60. Find the square roots of the following numbers by Prime factorisation method ,

9216

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61. Find the square roots of the following numbers by Prime factorisation method ,

529

62. Find the square roots of the following numbers by Prime factorisation method ,

8100

63. For each of the following numbers, find the smallest whole number by which should be multiplied so that to get a perfect square number. Also find the square root of the square number so obtained.

252

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64. For each of the following numbers, find the smallest whole number by which should be multiplied so that to get a perfect square number. Also find the square root of the square number so

obtained.

180

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65. For each of the following numbers, find the smallest whole number by which should be multiplied so that to get a perfect square number. Also find the square root of the square number so obtained.

1008

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66. For each of the following numbers, find the smallest whole number by which should be multiplied so that to get a perfect square number. Also find the square root of the square number so obtained.

2028

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67. For each of the following numbers, find the smallest whole number by which should be multiplied so that to get a perfect square number. Also find the square root of the square number so

obtained.

1458

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68. For each of the following numbers, find the smallest whole number by which should be multiplied so that to get a perfect square number. Also find the square root of the square number so obtained.

768

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69. For each of the following numbers, find the smallest whole number by which should be multiplied so that to get a perfect square number. Also find the square root of the square number so obtained.

252

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70. 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

71. Fore 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

72. Fore 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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73. Fore 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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74. 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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75. The student 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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76. 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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77. Find the smallest square number that is divided by each of the number, 4,9 and 10.

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

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79. Find the square root of each of the following numbers by division method:

2304

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80. Find the square root of each of the following numbers by division method:

4489

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81. Find the square root of each of the following numbers by division method:

3481

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82. Find the square root of each of the following numbers by division method:

529

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83. Find the square root of each of the following numbers by division method:

3249

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84. Find the square root of each of the following numbers by division method:

1369

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85. Find the square root of each of the following numbers by division method:

5776

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86. Find the square root of each of the following numbers by division method:

7921

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87. Find the square root of each of the following numbers by division method:

576

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88. Find the square root of each of the following numbers by division method:

1024

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89. Find the square root of each of the following numbers by division method:

3136

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90. Find the square root of each of the following numbers by division method:

900

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91. Find the number of digits in the square root of each of the following numbers (without an calculation):

64

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92. Find the number of digits in the square root of each of the following numbers (without an calculation):

144

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93. Find the number of digits in the square root of each of the following numbers (without an calculation):

4489

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94. Find the number of digits in the square root of each of the following numbers (without an calculation):

27225

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95. Find the number of digits in the square root of each of the following numbers (without an calculation):

390625

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96. Find the square root of the following decimal numbers:

2.56

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97. Find the square root of the following decimal numbers:

7.29

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98. Find the square root of the following decimal numbers:

51.84

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99. Find the square root of the following decimal numbers:

42.25

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100. Find the square root of the following decimal numbers:

31.36

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101. 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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102. 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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103. 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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104. 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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105. 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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106. 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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107. 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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108. 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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109. 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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110. 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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111. 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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112. Find the length of the side of a square whose area is $441m^2$.

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

If AB = 6 cm, BC = 8 cm, Find AC,

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

If AC = 13 cm, BC = 5 cm, Find AB.

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115. A garden has 100 plants. He wants to plant these in such a way that the number of rows and columns remains same. Find the minimum number of plants he needs more for this.

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116. Find the value of $\sqrt{169} \times \sqrt{64} \times \sqrt{16}$

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117. What is the smallest whole number by which 2940 must be multuplied in order to become a perfect square?

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118. What is the smallest whole number by 5000 must be divided to make it a perfect square?

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119. Find the perfect square numbers between 30 and 40, 50 and 60

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

1057

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121. The following numbers are obviously not perfect squares. Give reasons.

23453

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122. The following numbers are obviously not perfect squares. Give reasons.

7928

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123. The following numbers are obviously not perfect squares. Give reasons.

222222

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124. The following numbers are obviously not perfect squares. Give reasons.

1057

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

2061

Write five numbers which you can decide by looking at their one's digit that they are not square numbers.

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126. 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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127. Which of $123^2, 77^2, 82^2, 161^2, 109^2$ would end with digit 1?

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

19^2

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

24^2

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

26^2

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Watch Video Solution

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

36^2

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

34^2

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

1234

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

26387

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

52698

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

99880

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

21222

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

9106

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139. The square of which of the following numbers would be an odd number'an even number? Why?

727

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140. The square of which of the following numbers would be an odd number'an even number? Why?

158

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141. The square of which of the following numbers would be an odd number'an even number? Why?

269

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

121

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143. The square of which of the following numbers would be an odd number or an even number? Why?

1980

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

55

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

81

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

49

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

69

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148. How many natural numbres lie between 9^2 and 10^2 Between 11^2 and 12^2?

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

100^2 and 101^2

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

90^2 and 91^2

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

1000^2 and 1001^2

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

60

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

400

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

21^2

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

13^2

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

11^2

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

19^2

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158. Do you think the reverse is also true, I,e., is thesum of any two consecutive positive integers is perfect square of a number? Give example to support you answer.

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159. Write the square, making use of the above pattern.

111111^2

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160. Write the square, making use of the above pattern.

1111111^2

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161. Can you find the square of the following numbers using the above pattern?

6666667^2

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162. Can you find the square of the following numbers using the above pattern?

66666667^2

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

15

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

95

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

105

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

205

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167. $11^2 = 121$. What is the square root of 121?

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168. $14^2 = 196$. What is the square root of 196?

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169. $(-1)^2 = 1$, $Is -1$ a square root of 1?

$(-2)^2 = 4$, $Is -2$ a square root of 4?

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

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170. By repeated subtraction odd numbers starting from 1, find whether the following number are perfect squares or not? If the number is a perfect square then find it squares root.

121

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171. By repeated subtraction odd numbers starting from 1, find whether the following number are perfect squares or not? If the number is a perfect square then find it squares root.

55

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172. By repeated subtraction odd numbers starting from 1, find whether the following number are perfect squares or not? If the number is a perfect square then find it squares root.

36

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173. By repeated subtraction odd numbers starting from 1, find whether the following number are perfect squares or not? If the number is a perfect square then find it squares root.

49

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174. By repeated subtraction odd numbers starting from 1, find whether the following number are perfect squares or not? If the number is a perfect square

then find it squares root.

90

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175. 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 $\frac{n+1}{2}$ if n is odd?

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176. Without calculating square roots, find the number of digits in the square root of the following

numbers

25600

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177. Without calculating square roots, find the number of digits in the square root of the following numbers

100000000

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178. Without calculating square roots, find the number of digits in the square root of the following

numbers

36864

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179. Examine the value of the following to the nearest whole number.

$\sqrt{80}$

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180. Examine the value of the following to the nearest whole number.

$\sqrt{1000}$

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181. Examine the value of the following to the nearest whole number.

$\sqrt{350}$

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182. Examine the value of the following to the nearest whole number.

$\sqrt{500}$

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