CHAPTER-3

SQUARES AND SQUARE ROOTS

QUESTION BANK

1. **Multiple Choice Questions**
   196 is the square of
   (a) 11 (b) 12
   (c) 14 (d) 16

2. **Which of the following is a square of an even number?**
   (a) 144 (b) 169
   (c) 441 (d) 625

3. **A number ending in 9 will have the unit's place of its square as**
   (a) 3 (b) 9
   (c) 1 (d) 6

4. **Which of the following will have 4 at the unit's place?**
   (a) 14^2 (b) 62^2 (c) 27^2 (d)35^2

5. **How many natural numbers lie between 5^2 and 6^2?**
   (a) 9 (b) 10 (c)11 (d) 12

6. **Which of the following cannot be a perfect square?**
   (a) 841 (b) 529 (c) 198 (d) All of these

7. **The one's digit of the cube of 23 is**
   (a) 6 (b) 7 (c) 3 (d) 9

8. **A square board has an area of 144 sq units. How long is each side of the board?**
   (a) 11 units (b) 12 units (c) 13 units (d) 14 units

9. **The sum of successive odd numbers 1, 3, 5, 7, 9, 11, 13 and 15 is**
   (a) 61 (b) 64 (c) 49 (d) 36

10. **The sum of first n odd natural numbers is**
    (a) 2n +1 (b) n^2 (c) $n^2 - 1$ (d) $n^2 + 1$

11. **The hypotenuse of a right angled triangle with its legs of lengths 3x x 4x is**
(a) 5X (b)7x (c) 16x (d) 25x

12. **The next two numbers in the number pattern 1, 4, 9,16, 25,… are**

(a) 35, 48 (b) 36, 49 (c) 36, 48 (d) 35, 49

13. **Which among 43^2 , 67^2 , 52^2 , 59^2 would end with digit 1?**
    (a) 43^2 (b)67^2 (c)52^2 (d)59^2

14. **A perfect square can never have the following digit in its one's place.**
    (a) 1 (b) 8 (c) 0 (d) 6

Fill in the Blanks

15. **There are_____perfect squares between 1 and 100.**

16. **The unit's digit in the square of 1294 is_____**

17. **The square of 500 will have ------- zeroes.**

18. **There are ------- natural numbers between n^2 and $(n + l)^2$**

19. **The square root of 24025 will have_____digits.**

20. **The square of 5.5 is_____**

21. **The square root of 5.3 x 5.3 is_____**

22. **$1m^2$ =_____ cm^2.**

23. **The square of 0.7 is_____**

24. **The sides of a right angled triangle whose hypotenuse is 17cm, are_____and_____**

25. **The least number by which 125 be multiplied to make it a perfect square, is_____**

True/False

26. **The square of 86 will have 6 at the unit's place.**

27. The sum of two perfect squares is a perfect square.

28. **The product of two perfect squares is a perfect square.**

29. **There is no square number between 50 and 60.**

30. The square root of 1521 is 31.

31. The square of 2.8 is 78.4.

32. **The square root of 0.9 is 0.3.**

33. **The square of every natural number is always greater than the number itself.**

34. **There are 200 natural numbers between 100^2 and 101^2.**

35. **1000 is a perfect square.**

36. **A perfect square can have 8 as its unit's digit.**

37. **All numbers of a Pythagorean triplet are odd.**

38. **Square root of a number x is denoted by 4x.**

39. A **number having 7 at its one's place will have 3 at the unit's place of its square.**

40. **Write the first five square numbers.**

41. **Show that 500 is not a perfect square.**

42. **Express 81 as the sum of first nine consecutive odd numbers.**

43. **Using prime factorisation, find which of the following are perfect squares.**

(a) 484 **(b) 11250**
(c) 841 **(d) 729 .**

44. **Using distributive law, find the squares of (a) 101 (b) 72**

45. **Can a right angled triangle with sides 6cm, 10cm and 8cm be formed? Give reason.**

46. **Write the Pythagorean triplet whose one of the numbers is 4**

47. **Using prime factorisation, find the square roots of (a) 11025 (b) 4761**

48. **Is 176 a perfect square? If not;- find the smallest number by which it should be multiplied to get a perfect square.**

49. **Write two Pythagorean triplets, each having one of the numbers as 5.**

50. **By what smallest number should 216 be divided, so that the quotient is' a perfect square? Also, find the square root of the quotient.**

51. **Find the square root of the following by long division method. (a) 1369 (b) 5625**

52. **Find the square root of the following by long division method. : (a) 27.04 (b) 1.44**

53. **What is the least number, that should be subtracted from 1385 to get a perfect square?**

54. **What is the least number that should be added to 6200 to make it a perfect square?**

55. **Find the least number of four digits that is a perfect square.**

56. **Find the greatest number of three digits that is a perfect square.**

57. **Find the least square, number, which is exactly divisible by 3, 4, 5, 6 and 8.**

58. **Find the length of the side of a square, if the length of its diagonal is 10 cm.**

59. **A decimal number is multiplied by itself. If the product is 51.84, then find the number.**

60. **Find the decimal fraction, which when multiplied by itself, gives 84.64.**

61. **A farmer wants to plough his square field of side 150m. How much area will he have to plough?**

62. **What will be the number of unit squares on each side of a square graph paper, if the total number of unit squares is 256?**

63. **The dimensions of a rectangular field are 80m and 18m. Find the length of its diagonal.**

64. **Find the area of a square field, if its perimeter is 96 m.**

65. **How many square meters of carpet will be required for a square room of side 6.5m to be carpeted?**

66. **Find the side of a square, whose area is equal to the area of a rectangle with sides 6.4m and 2.5m.**

67. **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.**

68. **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.**

69. **A General wishes to draw up his 7500 soldiers in the form of a square. After arranging, he found out that some of them are left out. How many soldiers were left out?**

70. **8649 students were sitting in a lecture room in such a manner that there were as many**

students in the row as there were rows in the lecture room. How many students were there in each row of the lecture room?

71. **Rahul walks 12m North from his house and turns West to walk 35m to reach his friend's house. While returning, he walks diagonally from his friend's house to reach back to his house. What distance did he walk, while returning?**

72. **A 5.5m long ladder is leaned against a wall. The ladder reaches the wall to a height of 4.4m. Find the distance between the wall and the foot of the ladder.**

73. **A king wanted to reward his advisor, a Wiseman of the kingdom. So, he asked the Wiseman to name his own reward. The Wiseman thanked the king, but said that he would ask only for some gold coins each day for a month. The coins were to be counted out in a pattern of one coin for the first day, 3 coins for the second day, 5 coins for the third day and so on for 30 days. Without making calculations, find how many coins will the advisor get in that month?**

74. **Find three numbers in the ratio 2 : 3 : 5, the sum of whose squares is 608.**

75. **Find the smallest square number divisible by each of the numbers 8, 9 and 10.**

76. **Find the square root of 324 by the method of repeated subtraction.**

77. **A perfect square number has four digits, none of which is zero. The- digits from left to right have values that are even, even, odd, even. Find the number.**

78. **The perimeters of two squares are 40m and 96m, respectively. Find the perimeter of another square equal in area to the sum of the first two squares.**

79. **A three-digit perfect square is such that, if it is viewed upside down, the number seen is also a perfect square. What is the number?**

80. **13 and 31 is a strange pair of numbers, such that their squares 169 and 961 are also mirror of each other. Can you find two other such pairs?**

81. Which of the following triplets are Pythagorean?
(i) (14, 48, 50)
(ii) (18, 79, 82)

82. Find the square roots of the following decimal numbers
(i) 1056.25
(ii) 10020.01

83. What is the least number that must be subtracted from 3793 so as to get a perfect square? Also, find the square root of the number so obtained.

84. In a right triangle ABC, $\angle B = 90°$. a. If AB = 6 cm, BC = 8 cm, find AC b. If AC = 13 cm, BC = 5 cm, find AB.

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

86. 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 the number of columns. How many children would be left out in this arrangement?

1. 87. 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 the same. Find the minimum number of plants he needs more for this.

1. 88. Mention the smallest number, which when multiplied by 5408 gives a perfect square.

89. **A man, after a tour, finds that he had spent day as many rupees as the number of days he had been on tour. How long did his tour last, if he had spent in all 1,296?**

90. **Out of 745 students, maximum is to be arranged in the school field for a PT. display, such that the number of rows is equal to the number of columns. Find the number of rows if 16 students were left out after the arrangement.**

91. The area of a rectangle is 1936 sq. m. If the length of the rectangle is 4 times its breadth, find the dimensions of the rectangle.

92. In a school a P.T. teacher wants to arrange 2000 students in the form of rows and columns for P.T. display. If the number of rows is equal to number of columns and 64 students could not be accommodated in this arrangement. Find the number of rows.

93. In a school, the students of class VIII collected ₹2304 for a picnic. Each student contributed as many rupees as the number of students in the class. Find the number of students in the class

94. The product of two numbers is 7260. If one number is 15 times the other number, find the numbers.

95. Find three positive numbers in the ratio 2 : 3 : 5, the sum of whose squares is 950.

96. The perimeter of two squares is 60 metres and 144 metres respectively. Find the perimeter of another square equal in area to the sum of the first two squares.