


STUDY
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Chapter End Test
(2019-20)

Date : _____
Duration : 45 Min.
Max. Marks : 25

Mathematics
Topic: Squares and Square Roots

Class
VIII

Instructions:

- ▶ All questions are compulsory.
- ▶ Section A is comprised of 15 multiple choice questions carrying 1 mark each.
- ▶ Section B is comprised of 3 questions carrying 3, 3 and 4 marks respectively.
- ▶ Use of calculator is not permitted.
- ▶ Objectives of test paper. (i) To assess the conceptual understanding of students. (ii) To make them attempt subjective questions as required in CBSE Board Exam.

Section - A

1. 1682 will have _____ at its unit's place.
(a) 5 (b) 6 (c) 4 (d) 1
2. The sum of first 7 odd natural numbers is:
(a) 49 (b) 7 (c) 42 (d) 48
3. The Pythagorean triplet with 6 as a smallest member is:
(a) 6, 12, 13 (b) 6, 15, 17 (c) 6, 8, 10 (d) none of these
4. Which of the following is the square of an even number?
(a) 144 (b) 169 (c) 441 (d) 625
5. How many natural numbers lie between 25^2 and 26^2 ?
(a) 25 (b) 50 (c) 51 (d) 1
6. Which of the following number cannot be a perfect square?
(a) 841 (b) 529 (c) 198 (d) all of the above
7. 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
8. Which digit can never be the unit's digit of a perfect square?
(a) 1 (b) 8 (c) 0 (d) 6
9. Which of the following is a perfect square?
(a) 1000 (b) 10000 (c) 100000 (d) 1000000
10. The value of $\sqrt{176} + \sqrt{2401}$ is:
(a) 14 (b) 15 (c) 16 (d) 17
11. Given that $\sqrt{4096} = 64$, the value of $\sqrt{4096} + \sqrt{40.96}$
(a) 74 (b) 60.4 (c) 64.4 (d) 70.4
12. "The product of two perfect squares is a perfect square"- The statement is:
(a) always true (b) always false
(c) might be true sometimes (d) cannot be determined

13. $\sqrt{1.96}$ is:
(a) 14 (b) 0.14 (c) 1.4 (d) 0.0014
14. The least number by which 125 should be multiplied to make it a perfect square is:
(a) 4 (b) 2 (c) 5 (d) 3
15. The least number by which 72 should be divided to make it a perfect square is:
(a) 8 (b) 9 (c) 2 (d) 6

Section - B

1. What is the least number that should be subtracted from 194491 to make it a perfect square? [3]
2. Find the square root of 4096 by prime factorisation method. [3]
3. Find the smallest square number divisible by each one of the numbers 8, 9 and 10. [4]

OR

A society collected ₹92.16. Each member collected as many paise as there were members.
How many members were there and how much did each contribute?



Hints/Solutions to Chapter End Test (2019-20)

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Section - A

- | | | | |
|---------|---------|---------|---------|
| 1. (c) | 2. (a) | 3. (c) | 4. (a) |
| 5. (b) | 6. (c) | 7. (b) | 8. (b) |
| 9. (b) | 10. (b) | 11. (d) | 12. (a) |
| 13. (c) | 14. (c) | 15. (c) | |

Section - B

1.

$$\begin{array}{r} 441 \\ 4 \overline{) 194491} \\ \underline{16} \\ 84 \\ \underline{344} \\ 336 \\ 881 \\ \underline{891} \\ 881 \\ \underline{10} \end{array}$$

Since remainder is 10

∴ 10 should be subtracted from the given number to make it a perfect square.

2.

$$\begin{aligned} & \sqrt{4096} \\ &= \sqrt{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2} \\ &= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \\ &= 64. \end{aligned}$$

3.

The smallest number which is divisible by 8, 9 and 10 is the LCM of 8, 9, 10

$$\begin{array}{l} 2 \mid 8, 9, 10 \\ 2 \mid 4, 9, 5 \\ 2 \mid 2, 9, 5 \\ 5 \mid 1, 9, 5 \\ 3 \mid 1, 9, 1 \\ 3 \mid 1, 3, 1 \\ \quad \mid 1, 1, 1 \end{array}$$

So LCM = $2 \times 2 \times 2 \times 5 \times 3 \times 3$

We observe that, 2, 5 are not making pairs.

So to make it a perfect square we should multiply it by 2×5 i.e., 10.

So required number = $2 \times 2 \times 2 \times 5 \times 3 \times 3 \times 2 \times 5 = 3600$

OR

Total amount collected = ₹92.16 = 9216 paise

Number of members = Amount of paise collected from each member

Let number of members be x

So amount of paise collected from each be x

i.e., total amount = Number of members \times amount collected from each

$$9216 = x \times x$$

$$9216 = x^2$$

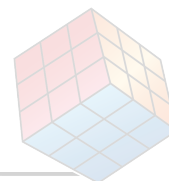
$$\sqrt{9216} = x$$

$$\begin{array}{r} 96 \\ 9 \overline{)9216} \\ \underline{81} \\ 1116 \\ \underline{1116} \\ 0 \end{array}$$

So number of members = amount of paise = 96



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