

Chapter – 1 | A Square and A Cube

QUIZ-01

1. Which lockers remain open after 100 people toggle 100 lockers?

- A. Prime numbered lockers
- B. Even numbered lockers
- C. Square numbered lockers
- D. Odd numbered lockers

(C)

Explanation : Only square numbers have an odd number of factors, so they remain open.

2. Which number is not a perfect square?

- A. 144
- B. 196
- C. 225
- D. 327

(D)

Explanation : Perfect squares cannot end in 2, 3, 7, or 8; 327 ends in 7.

3. What is the square root of 576?

- A. 22
- B. 23
- C. 24
- D. 26

(C)

Explanation : $24 \times 24 = 576$.

4. The sum of the first n odd numbers is:

- A. n
- B. $2n$
- C. n^2
- D. n^3

(C)

Explanation : $1 + 3 + 5 + \dots$ up to n terms equals n^2 .

5. Which number has exactly two factors?

- A. Square number
- B. Prime number
- C. Cube number
- D. Composite number

(B)

Explanation : A prime number has only 1 and itself as factors.

6. Which of these is a perfect cube?

- A. 9
- B. 27
- C. 36
- D. 50

(B)

Explanation : $27 = 3 \times 3 \times 3$.

7. What is the cube root of 512?

- A. 6
- B. 7
- C. 8
- D. 9

(C)

Explanation : $8 \times 8 \times 8 = 512$.

8. A number is a perfect square if its prime factors can be split into:

- A. Two identical groups
- B. Three identical groups
- C. Four different groups
- D. Odd and even groups

(A)

Explanation : Perfect squares have prime factors in pairs.

9. A cube number's prime factors can be grouped into:

- A. Pairs
- B. Triplets
- C. Singles
- D. Tens

(B)

Explanation : Perfect cubes have prime factors in groups of three.

10. Which number is known as the Hardy–Ramanujan Number?

- A. 729
- B. 1000
- C. 1331
- D. 1729

(D)

Explanation : 1729 can be written as the sum of two cubes in two different ways.