

- Square Numbers
- Cube Numbers

Square Numbers

A square number is the product of an integer multiplied by itself. Formally, for any integer n , the square number is $n^2 = n \times n$. Square numbers are also called perfect squares.

Formula Derivation

Given $n \in \mathbb{Z}$, the square of n is n^2 . For example, if $n = 5$, then $5^2 = 5 \times 5 = 25$.

Worked Illustrations

Calculate the square of 7.

Step 1: Identify $n = 7$.

Step 2: Compute $7^2 = 7 \times 7 = 49$.

Therefore, the square of 7 is 49.

Solved Examples

Example 1: Find the square of 12.

Step 1: $n = 12$.

Step 2: $12^2 = 12 \times 12 = 144$.

Answer: 144

Example 2: Find the square of 15.

Step 1: $n = 15$.

Step 2: $15^2 = 15 \times 15 = 225$.

Answer: 225

Practice Set

- **Level 1 – Easy**
 - Find the square of 8.
 - Find the square of 10.
 - Find the square of 3.
- **Level 2 – Moderate**
 - Find the square of 17.
 - Find the square of 23.
 - Find the square of 30.
- **Level 3 – Challenging**
 - Find the square of 125.
 - Find the square of 99.
 - Find the square of 144.

Answer Key

- $8^2 = 64$
- $10^2 = 100$
- $3^2 = 9$
- $17^2 = 289$
- $23^2 = 529$
- $30^2 = 900$
- $125^2 = 15625$
- $99^2 = 9801$
- $144^2 = 20736$

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Quick Reference

Number (n)	Square (n ²)
1	1
2	4
3	9
4	16
5	25

Glossary

- **Square Number:** A number obtained by multiplying an integer by itself.
- **Perfect Square:** A square number that is the square of a natural number.
- **Square Root:** The inverse operation of squaring, denoted \sqrt{n} .

Cube Numbers

A cube number is the product of an integer multiplied by itself three times. For any integer n , the cube number is $n^3 = n \times n \times n$. Cube numbers are also called perfect cubes.

Formula Derivation

Given $n \in \mathbb{Z}$, the cube of n is n^3 . For example, if $n = 4$, then $4^3 = 4 \times 4 \times 4 = 64$.

Worked Illustrations

Calculate the cube of 5.

Step 1: Identify $n = 5$.

Step 2: Compute $5^3 = 5 \times 5 \times 5 = 125$.

Therefore, the cube of 5 is 125.

Solved Examples

Example 1: Find the cube of 3.

Step 1: $n = 3$.

Step 2: $3^3 = 3 \times 3 \times 3 = 27$.

Answer: 27

Example 2: Find the cube of 7.

Step 1: $n = 7$.

Step 2: $7^3 = 7 \times 7 \times 7 = 343$.

Answer: 343

Practice Set

- **Level 1 – Easy**

- Find the cube of 2.
- Find the cube of 4.
- Find the cube of 1.

- **Level 2 – Moderate**
 - Find the cube of 6.
 - Find the cube of 9.
 - Find the cube of 10.
- **Level 3 – Challenging**
 - Find the cube of 15.
 - Find the cube of 20.
 - Find the cube of 25.

Answer Key

- $2^3 = 8$
- $4^3 = 64$
- $1^3 = 1$
- $6^3 = 216$
- $9^3 = 729$
- $10^3 = 1000$
- $15^3 = 3375$
- $20^3 = 8000$
- $25^3 = 15625$

Quick Reference

Number (n)	Cube (n^3)
1	1
2	8
3	27
4	64
5	125

Glossary

- **Cube Number:** A number obtained by multiplying an integer by itself three times.
- **Perfect Cube:** A cube number that is the cube of a natural number.
- **Cube Root:** The inverse operation of cubing, denoted $\sqrt[3]{n}$.

