

PRACTICE WORKBOOK

CLASS 11

Mathematics

Six selected-skill units in sets, trigonometry, algebra, geometry, introductory calculus and probability, with worked guidance for CBSE 2026–27 Class XI.

**6 practice units****36 tasks with answer guidance**

Name / नाम: _____

Original selected-topic practice. Use alongside school lessons and the prescribed textbook. The contents define this book's scope.

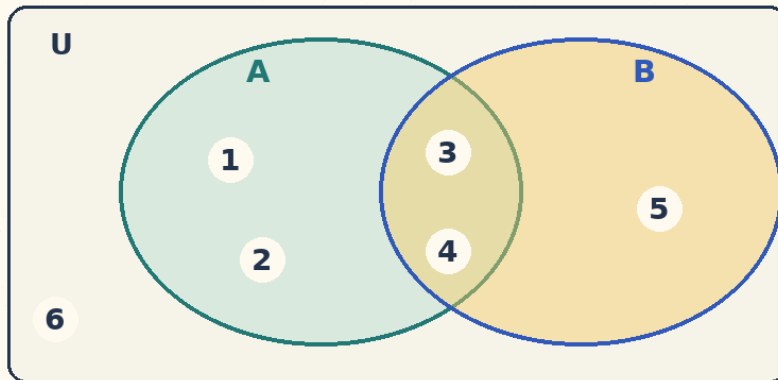
CBSE course 041 · 2026–27 · Selected practice, not a complete syllabus or official examination paper.

UNIT 01 · LOOK & EXPLAIN

Sets, relations and domains

A union counts the overlap once

Worked example: $U = \{1, 2, 3, 4, 5, 6\}$



$$A = \{1, 2, 3, 4\}$$

$$B = \{3, 4, 5\}$$

$$A \cap B = \{3, 4\}$$

$$A \cup B =$$

$$\{1, 2, 3, 4, 5\}$$

$$A \text{ complement} = \{5, 6\}$$

3 and 4 belong to both sets. 6 is in the universal set but outside A and B.

Use the labels and worked example to explain the idea. The diagram is schematic unless a scale is given.

Look, annotate and explain

Identify the parts or values that matter. Add a label or annotation to show a connection. Explain how the diagram supports the worked example, then use it with the practice on the next page.

UNIT 01 · APPLY & EXPLAIN

Sets, relations and domains

4. Does $R = \{(1,2), (2,3), (3,3)\}$ define a function from $\{1,2,3\}$ to $\{2,3,4\}$? State its range.

[2 marks]

5. Find the real domain of $f(x) = \sqrt{(x-2)/(x-5)}$. [2 marks]

6. For $f(x) = x^2$ on domain $\{-2, -1, 0, 1, 2\}$ and codomain $\{0, 1, 2, 3, 4\}$, find the range. [2

marks]

Show your thinking with a drawing, diagram or explanation.

Pause & reflect

What can I explain now? What will I try again?

☐ I tried ☐ I explained ☐ I checked



UNIT 01 · ANSWER GUIDANCE

Sets, relations and domains

1. Union $\{1,3,4,5\}$; intersection $\{3\}$; difference $\{1,5\}$.
2. At least one $= 23 + 18 - 7 = 34$. Neither $= 40 - 34 = 6$.
3. $\{(a,1),(a,2),(a,3),(b,1),(b,2),(b,3)\}$; cardinality $= 2 \times 3 = 6$.
4. Yes: every domain element has exactly one image. Range $= \{2,3\}$; the unused codomain element 4 does not prevent it being a function.
5. Require $x \geq 2$ and $x \neq 5$. Domain $= [2,5) \cup (5,\infty)$.
6. The outputs are 4,1,0,1,4. Distinct outputs give range $\{0,1,4\}$.

Teaching note

Write the universal set before taking a complement and the input restrictions before simplifying.

Curriculum reference: https://cbseacademic.nic.in/web_material/CurriculumMain27/SecPart2/Maths_SecP2_2026-27.pdf

Selected units; outcomes are publisher-defined. Practical, project and prescribed literature requirements must also be studied through school.