

CSCA Video Course

Why We Created This Course

Students preparing for the CSCA come from a wide range of academic backgrounds. Some may have been away from high school subjects for several years, while others come from education systems that differ significantly from China's. There are also students whose intended majors do not normally require these subjects but must still take the CSCA due to university admission requirements.

To support these students, we invited experienced teachers working in international education in China to develop this course.

The aim is to provide a clear and systematic pathway for rebuilding the key concepts required by the CSCA syllabus.

Teacher profiles are available on our website:
crosslineedu.com



Video Classroom (Vimeo)

Access Your Video Lessons Anytime

You will be added to our online video classroom on Vimeo, where all course lessons are a.

You can watch the videos at your own pace and leave questions or comments directly under each lesson.

What the Video Lessons Include

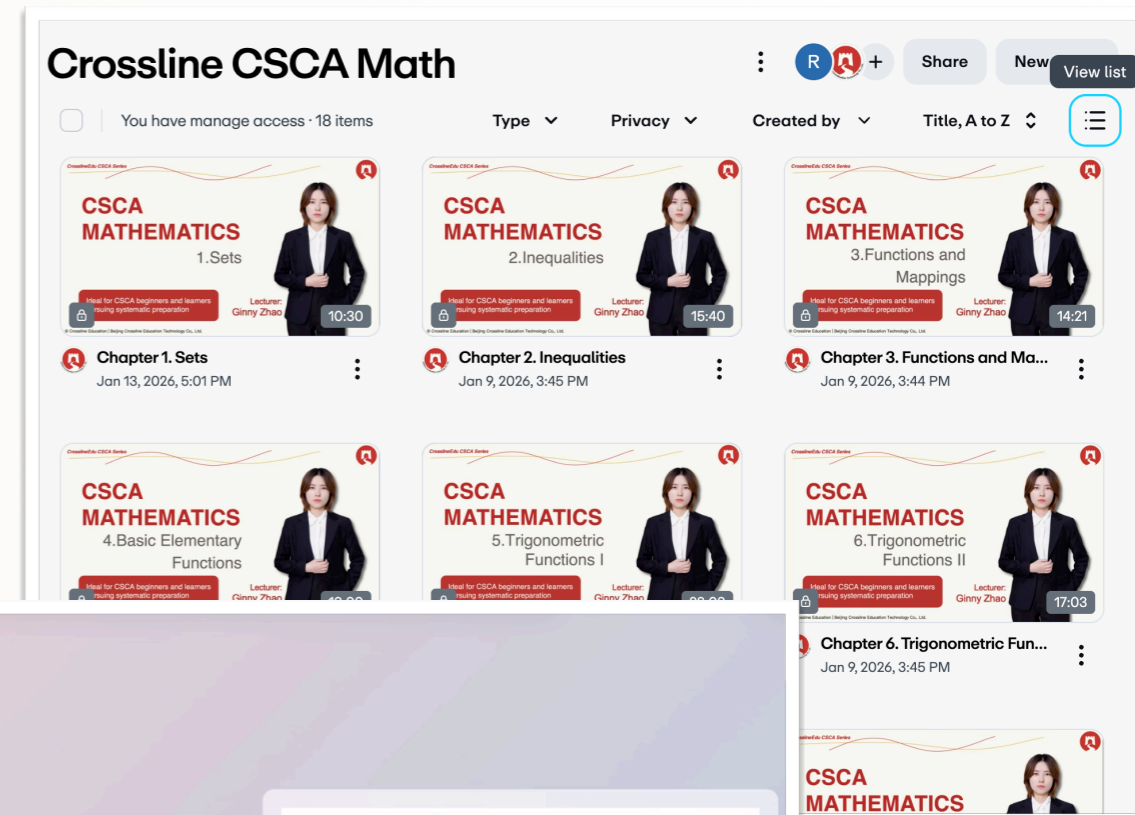
- Structured concept explanations aligned with the CSCA syllabus
- Worked examples demonstrating exam-style problem solving
- Step-by-step methods used in CSCA questions
- Analysis of common mistakes from past CSCA exams

The lessons focus on building clear understanding before intensive practice.

For the Trial Lessons:

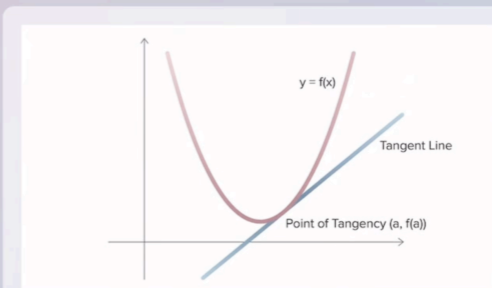
Math: <https://youtu.be/6s7sUjEYN3w>

Physics: <https://youtu.be/2ZCdUpTRfpc>



Chapter 2: The Derivative

Concepts, Rules, and Applications



rules and its applications

$F_{net} = ma$

F_{net} = Net Force (Newtons, N)
 m = Mass (kilograms, kg)
 a = Acceleration (m/s^2)

Critical: The formula uses Net Force — the vector sum of all forces acting on the object.

Force Diagrams

Worked Example

Object (2 kg) on horizontal surface.
 Pulling Force = 4 N. Friction = 2 N.

Step 1: Calculate Net Force
 $F_{net} = 4\text{ N} - 2\text{ N} = 2\text{ N}$

Step 2: Calculate Acceleration
 $a = F_{net} / m = 2\text{ N} / 2\text{ kg} = 1\text{ m/s}^2$

Step 3: Find Velocity (at t=4s)
 $v = v_0 + at = 0 + (1)(4) = 4\text{ m/s}$

the acceleration is 1 * 4 second

Course Learning Kit

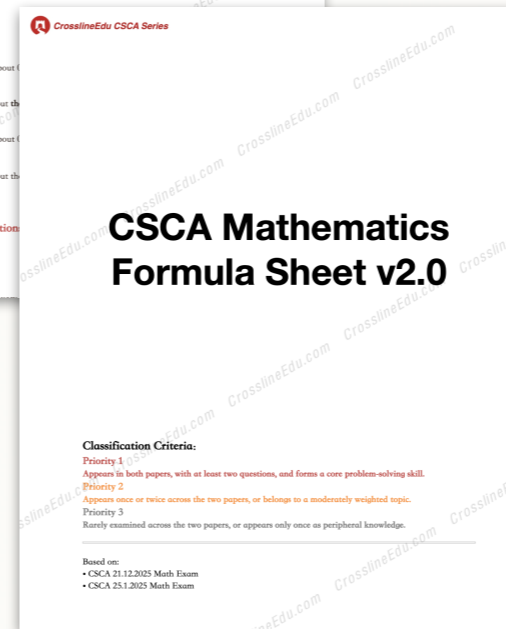
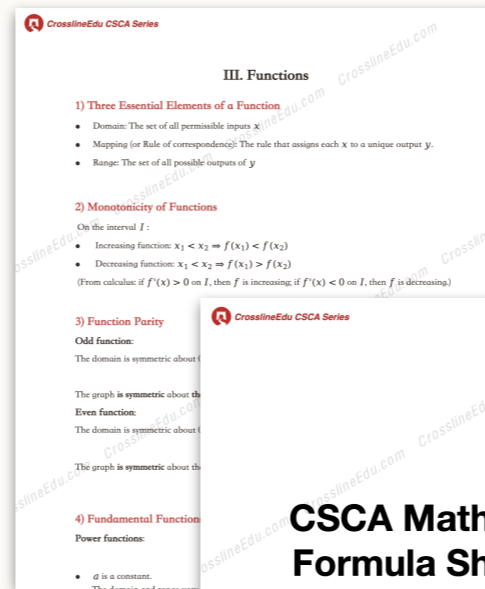
Supporting Materials for the Course

Alongside the video lessons, students will receive access to the Course Learning Kit, which contains all supporting learning materials.

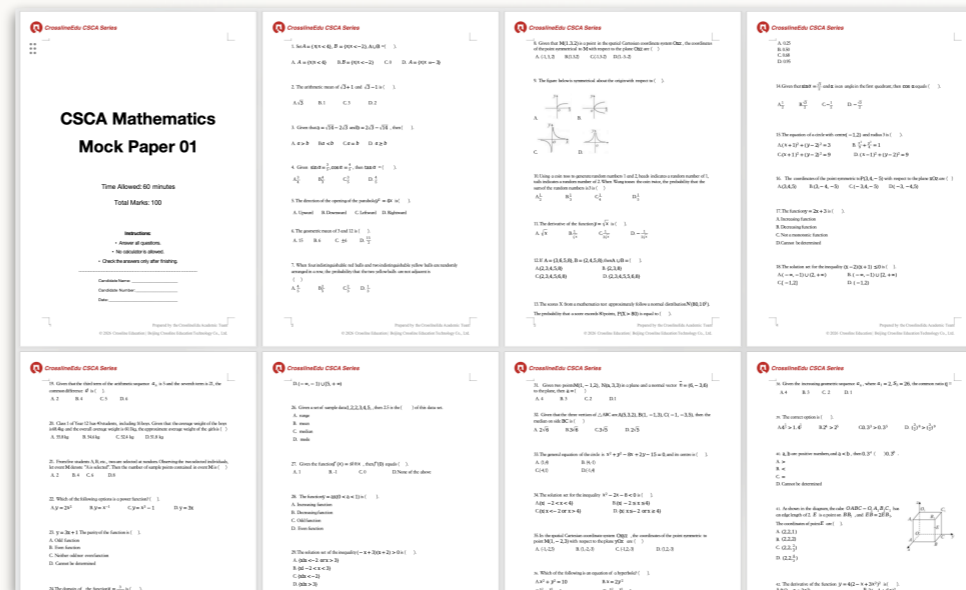
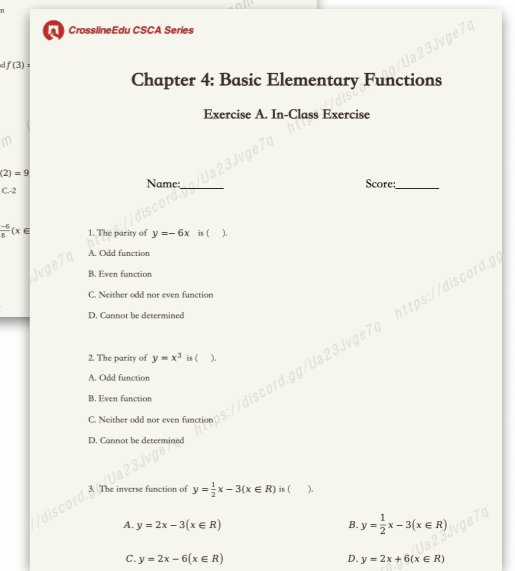
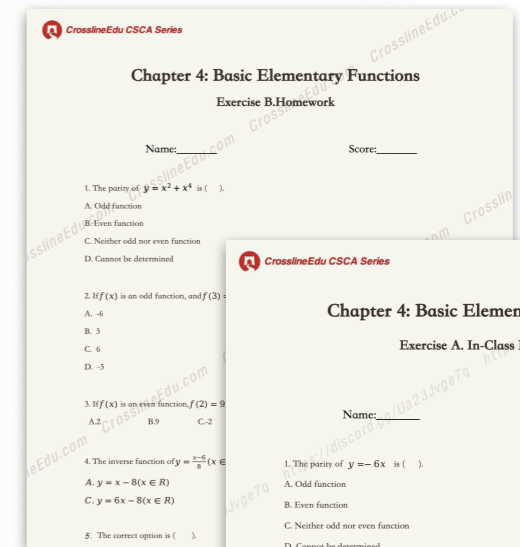
These materials are designed to be used together with the video lessons to reinforce concepts and develop exam-level problem-solving skills.

What's Included

- Formula Sheet (Version 2.0)**
 Essential formulas organised according to the course teaching sequence.
- Dual-Layer Practice System**
 - Set A – In-class Practice**
 Short exercises for immediate concept reinforcement.
 - Set B – Homework Practice**
 More advanced questions to deepen understanding.
- CSCA Mock Papers (2 Sets)**
 Full-length exam-style papers aligned with CSCA structure and difficulty.



- Math Formula Sheet v2.0 | 数学公式书2.0版
- Math Mock Exam Papers | 数学模拟试卷
- Math Reconstructed Past Papers | 数学重构版真题
- Video Course Practice Exercises | 视频课配套练习



- 3. Functions and Mappings - A.pdf
- 3. Functions and Mappings - B.pdf
- 4. Basic Elementary Functions - A.pdf
- 4. Basic Elementary Functions - B.pdf
- 5. Trigonometric Functions I - A.pdf
- 5. Trigonometric Functions I - B.pdf
- 6. Trigonometric Functions II - A.pdf
- 6. Trigonometric Functions II - B.pdf
- 7. Sequences - A.pdf
- 7. Sequences - B.pdf
- 8. Limits of Functions - A.pdf
- 8. Limits of Functions - B.pdf



Thank you!

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 YouTube



 Xiaohongshu