

PREPARING FOR STEP: a view from behind the scenes

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Plan of Talk

- What is STEP?
- Setting, marking and grading
- Preparing for 'STEP'
- The Correspondence Course

What is STEP ? (1)

- Three papers: I, II and III
- I and II based on A-level common core plus a few additional topics (e.g. induction), and some mechanics and probability
- III based on an extended syllabus, but nothing beyond 'Further Mathematics'

What is STEP? (2)

Who takes STEP?

- Used for conditional offers by Cambridge, Warwick + ???
- Entry (in round numbers):
Paper I – 1500; Paper II – 1000; Paper III-800.
- Correlates well with Tripos examinations

What is STEP? (3)

Comparison with A-level:

- 'Harder' questions
- Multi-topic questions
- Choice of questions (6/13)
- No calculators
- No part marks

What is STEP? (4)

What makes a good STEP question?

- Unfamiliar techniques
- Familiar techniques in unusual situations
- New definitions
- Unolympiad style
- Few instructions
- (Lovely result)

Setting STEP (1)

The team:

- Three setters, one for each paper
- Three revisers
- Two vetters
- me

Setting STEP (2)

Timetable

- Easter: setters submit first drafts
- July: nth draft goes to revisers ($n \sim \text{infinity}$)
- September/October: two QPECs
- January: papers to first vetter(s)
- February: papers to second vetter
- March: papers to print

Marking STEP

- Sweat shop marking
- Graduate students
- Team of admin staff

Grading STEP

- Standard cohort (Cambridge offer-holders)
- About 170 1+1s in Papers II + III
- Symmetric matrix of Grade / Paper (to make Paper II and Paper III equally 'hard')
- Paper I borderline determined by other factors
- Grading panel includes representatives from Cambridge and Warwick universities as well as examiners

Preparing for step

Advice to students:

- Practise
- Start early
- Use resources

Preparing for STEP (2)

Resources:

- The OCR web site has lots of links:

[Wwww.stepmathematics.org.uk](http://www.stepmathematics.org.uk)

including (coming soon) a searchable data base of all STEP questions (back to 1987).

- Advanced Problems in Mathematics, now published by Openbookpublishers,

www.openbookpublishers.com

available as a lovely paperback (no royalties!), online and as a free pdf download.

Preparing for STEP (3)

Resources (continued):

- NRICH has 'STEP prep' materials
- FMSN
- Various programmes from (e.g.) UCL, Kent University, etc

Correspondence course (1)

- DfE funded pilot project
- 2 years (one cohort), finishing in June
- First recruitment: Jan 2015 (120 students)
- Second recruitment: Sept 2015 (250 students)
- Possible continuation (via NRICH)

Correspondence course (2)

- One assignment per fortnight (with feedback for those enrolled on the course)
- Forums
- Postmortems (but no full solutions!)
- Material publically available:
www.correspondence.maths.org.uk

