Using the STEP Support Program

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Challenges

What challenges do you face with STEP?

What challenges do your students face?

Questions we will (try to) answer

- What is STEP and why is it used?
- How can you support your students?
- How should students prepare for it?
- What resources are there?

What is STEP?

- “Sixth Term Examination Paper”
- Part of Cambridge University offers (maths and others)
- Other Universities require or recommend

Specification

STEP I and II

- "Typical" C1-C4, M1-M2 and S1-S2
- Plus proof by induction and inequalities
- STEP II intended to be harder than STEP I

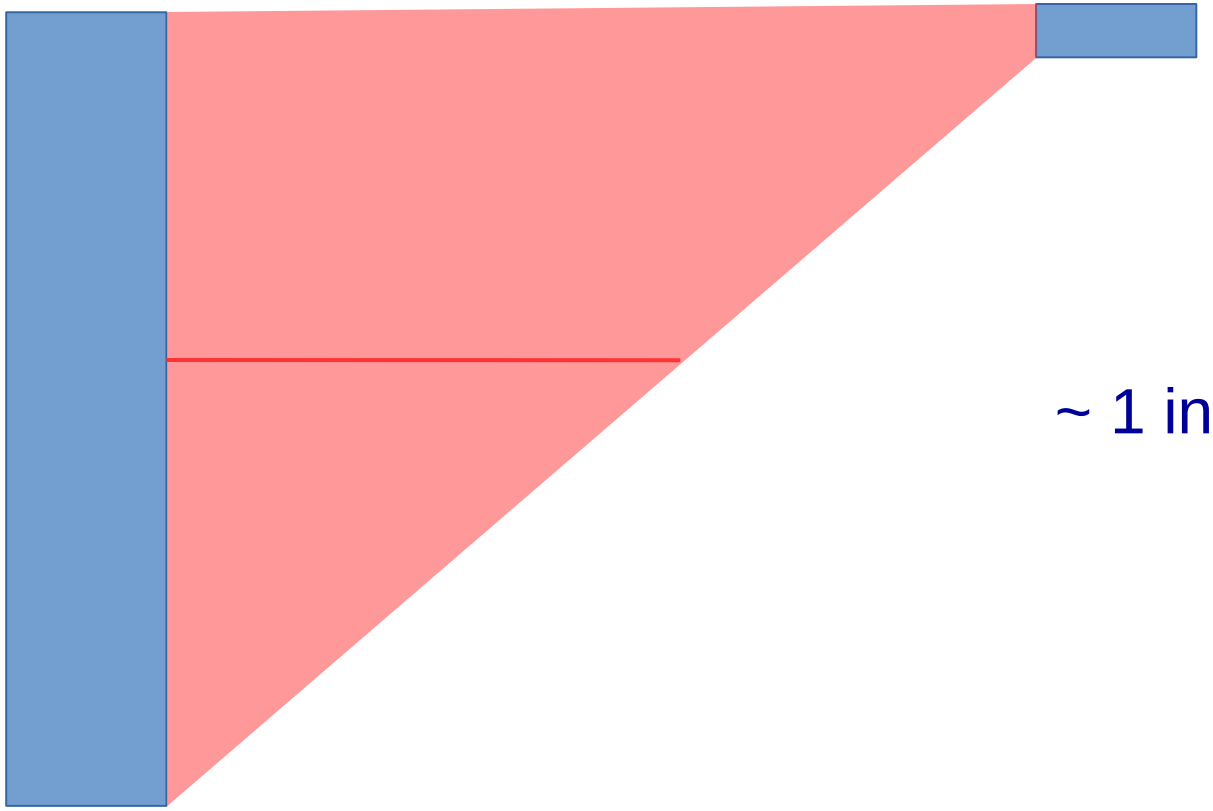
STEP III

- Pure includes hyperbolic functions, complex numbers and further calculus
- Mechanics includes SHM, elastic strings, inertia
- Statistics includes generating functions, algebra of expectations and CLT

Why STEP?

~4000 A* Further Maths

~250 Cambridge places



~ 1 in 16

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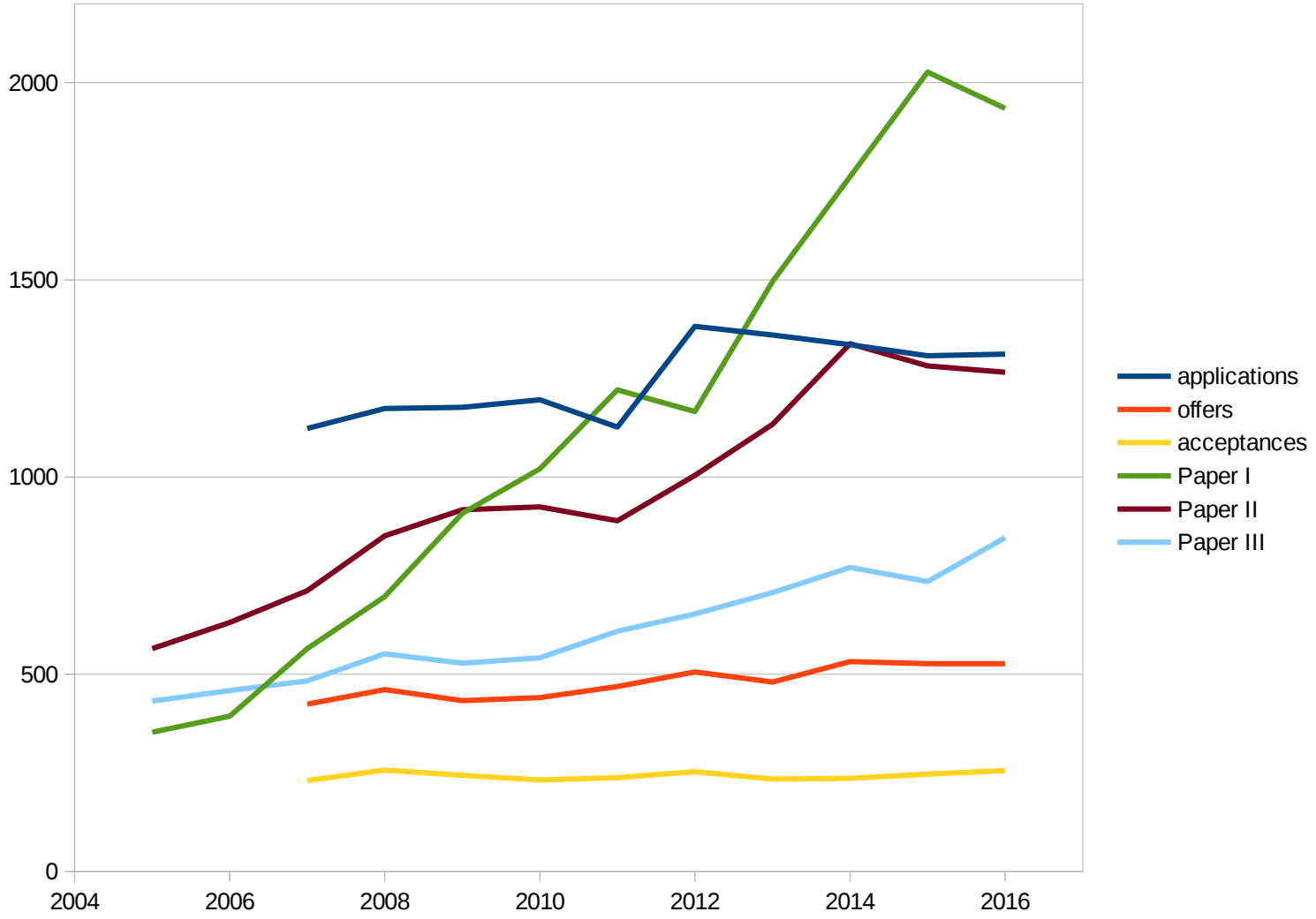
Benefits

- Consistent baseline that can discriminate among high-performing students
- Different style prepares students for university maths
- Don’t have to rely on interview
- Colleges have access to scripts

The last 10 years



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Challenges

- Some schools have lots of experience
- And some don’t
- Some teachers have time to support it
- And some don’t

That’s what we’re doing here!

Grade 1 Boundaries

	STEP I	STEP II	STEP III
2011	66	62	65
2012	77	72	65
2013	82	79	63
2014	63	74	59
2015	65	68	65
2016	75	74	64

A perfect answer gets 20 marks

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Your turn

Reflections

- How did you get on?
- What are the differences between STEP and A-level?
- How would your students feel if presented with one of these questions?

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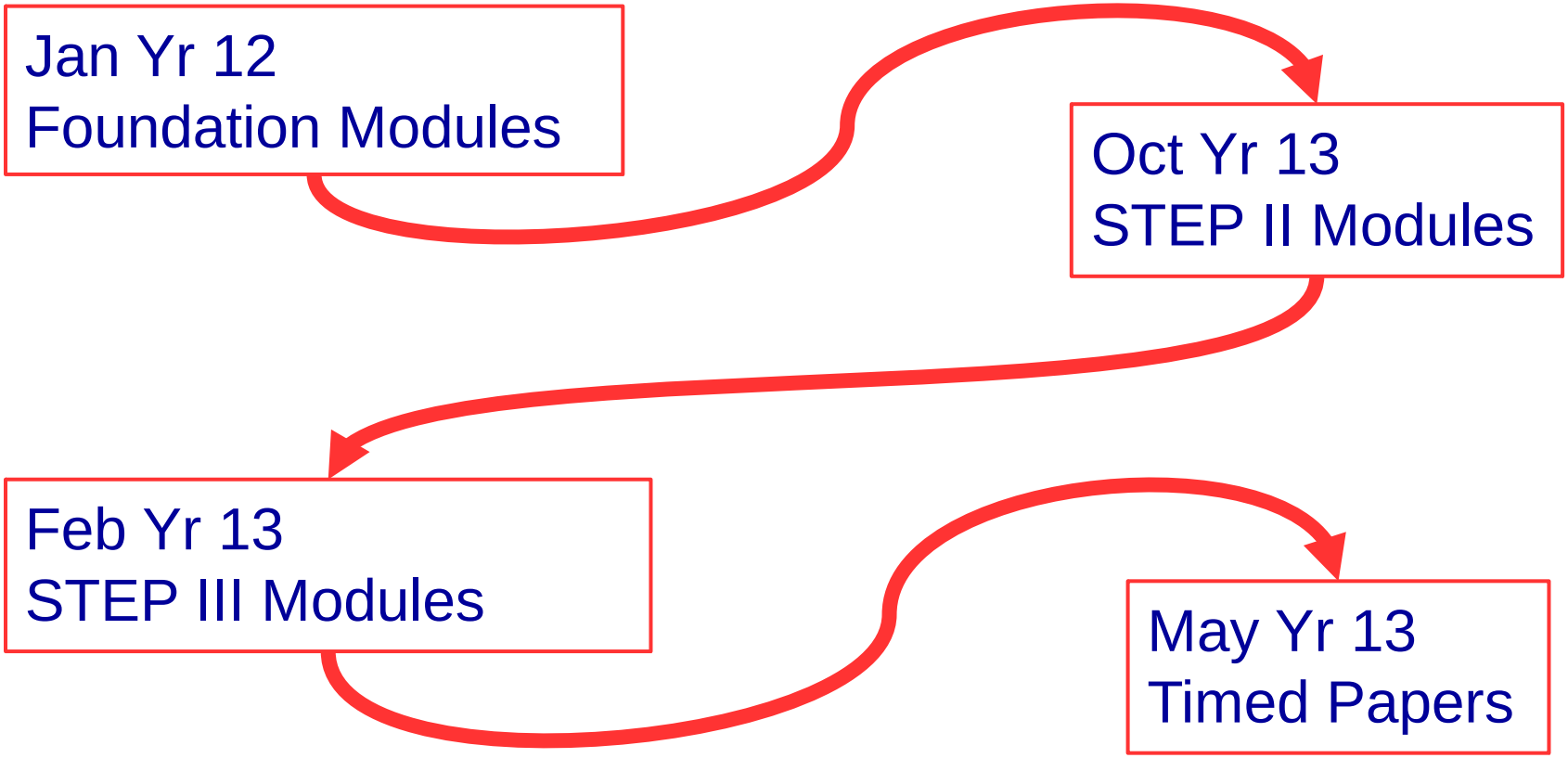
- Foundation modules
  - » Preparation leading into STEP question
  - » Hints and partial solutions
- STEP II/III modules
  - » 4 questions on an area of the specification
  - » Topic notes
  - » Hints document
  - » Solutions
- Forum
  - » Moderated by staff and Cambridge students
  - » Posts responded to within a day

A suggested route



How you can help your students

- Time and a friendly face
- Reassurance
- General advice
  - » Presentation of work
  - » Exam technique

Student preparation

- Do lots and lots (and lots) of questions!
- Use the assignments on maths.org/step
- Earlier they can start the better
- Use hints and solutions to help through
- Near the exams try some timed papers
- Ask for help!

Advice to give students

- Don’t panic!
- Don’t just read the solutions, use them
- Clear layout!
- Try drawing a diagram or graph
- Expect long messy algebra
- Brute force and ignorance

Exam tips

- Read through the questions before starting
- When to stop working on a question
- “Unusual” questions
- “Show that” is equivalent to “Prove that”
- Do not assume what you are trying to prove
- Instructions must be obeyed - “Hence”
- “Stem” results

Mechanics and Statistics

- Don’t dismiss them automatically!
- Often an exercise in algebra
- Statistics basically means Probability
- Some questions can be nice!

Websites

- maths.org/step
- admissionstestingservice.org
- mei.org.uk/step-aea-solutions
- stepdatabase.maths.org

Keeping in touch

- Ask questions on the forum
- Any criticisms or suggestions for improvement (or compliments) please email step@maths.org
- Tweet @nrichmaths