Mathematics
Department

Welcomes you to …

Year 11 Parent Information Evening

Mark Eaden
Head of Maths

Peter Watts
KS4 Coordinator

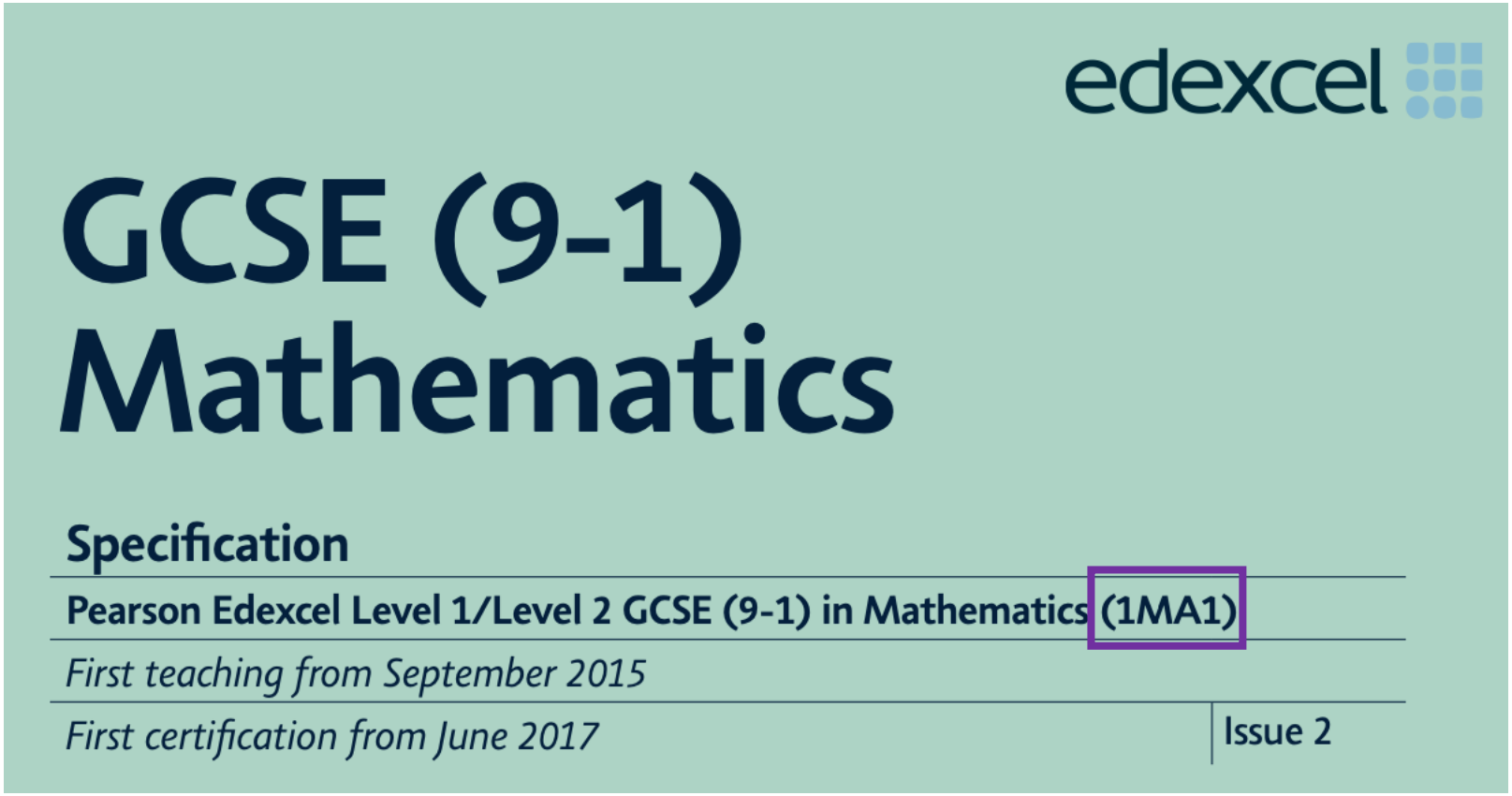
Session Overview

1 What is covered in the Maths GCSE and how is it assessed?

2 How can students revise effectively for Maths?

3 How does *Hegarty Maths* work and what are the benefits?

Mathematics
Department



SCAN ME

Direct link

What is covered in the Maths GCSE and how is it assessed?

Tier	Topic area	Weighting
Foundation	Number	22 - 28%
	Algebra	17 - 23%
	Ratio, Proportion and Rates of change	22 - 28%
	Geometry and Measures	12 - 18%
	Statistics & Probability	12 - 18%
Higher	Number	12 - 18%
	Algebra	27 - 33%
	Ratio, Proportion and Rates of change	17 - 23%
	Geometry and Measures	17 - 23%
	Statistics & Probability	12 - 18%

Foundation tier knowledge, skills and understanding

Can be found in the specification document

1. Number

Structure and calculation

What students need to learn:

N1 order positive and negative integers, decimals and fractions; use the symbols $=, \neq, <, >, \leq, \geq$

N2 apply the four operations, including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers – all both positive and negative; understand and use place value (e.g. when working with very large or very small numbers, and when calculating with decimals)

N3 recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions); use conventional notation for priority of operations, including brackets, powers, roots and reciprocals

N4 use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation theorem

N5 apply systematic listing strategies

N6 use positive integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5

Higher tier knowledge, skills and understanding

Can be found in the specification document

1. Number

Structure and calculation

What students need to learn:

N1 order positive and negative integers, decimals and fractions; use the symbols $=, \neq, <, >, \leq, \geq$

N2 apply the four operations, including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers – all both positive and negative; understand and use place value (e.g. when working with very large or very small numbers, and when calculating with decimals)

N3 recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions); use conventional notation for priority of operations, including brackets, powers, roots and reciprocals

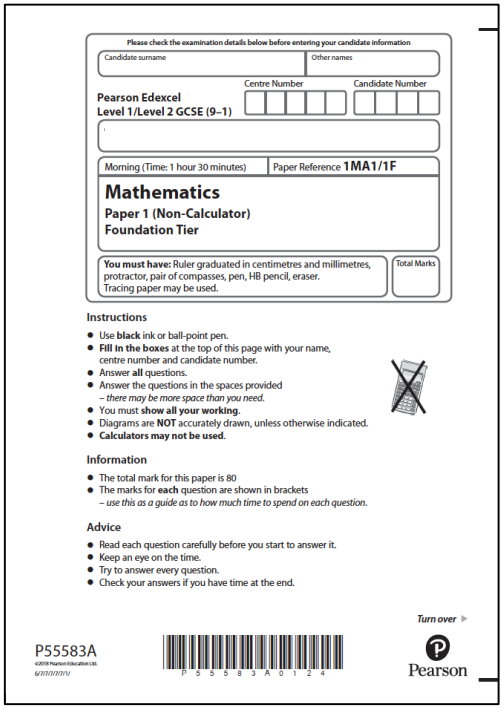
N4 use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation theorem

N5 apply systematic listing strategies, **including use of the product rule for counting (i.e. if there are m ways of doing one task and for each of these, there are n ways of doing another task, then the total number of ways the two tasks can be done is $m \times n$ ways)**

What is covered in the Maths GCSE and how is it assessed?

The whole GCSE is determined by 240 marks across 4½ hours …

Paper 1
Non-calculator



Please check the examination details below before entering your candidate information

Candidate surname | Other names

Centre Number | Candidate Number

Pearson Edexcel
Level 1/Level 2 GCSE (9–1)

Morning (Time: 1 hour 30 minutes) | Paper Reference 1MA1/1F

Mathematics
Paper 1 (Non-Calculator)
Foundation Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used. | Total Marks

Instructions
- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may not be used.**

Information
- The total mark for this paper is 80
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice
- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

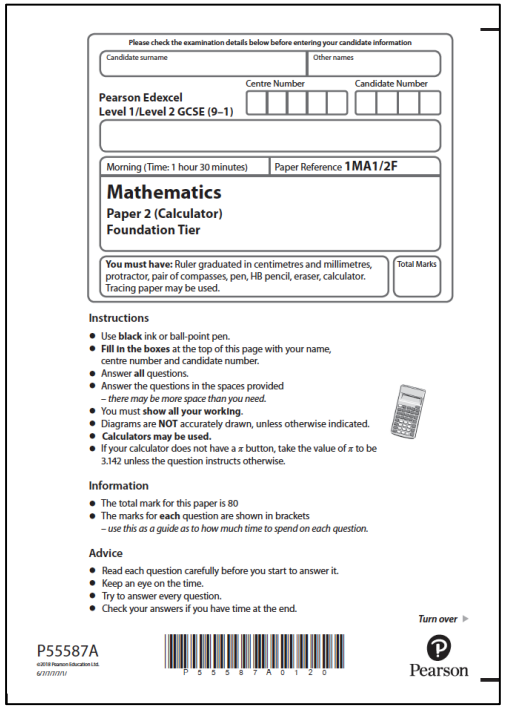
Turn over

P55583A

Pearson

19th May 2020
80 marks
1 hour 30 minutes

Paper 2
Calculator



Please check the examination details below before entering your candidate information

Candidate surname | Other names

Centre Number | Candidate Number

Pearson Edexcel
Level 1/Level 2 GCSE (9–1)

Morning (Time: 1 hour 30 minutes) | Paper Reference 1MA1/2F

Mathematics
Paper 2 (Calculator)
Foundation Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used. | Total Marks

Instructions
- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information
- The total mark for this paper is 80
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice
- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

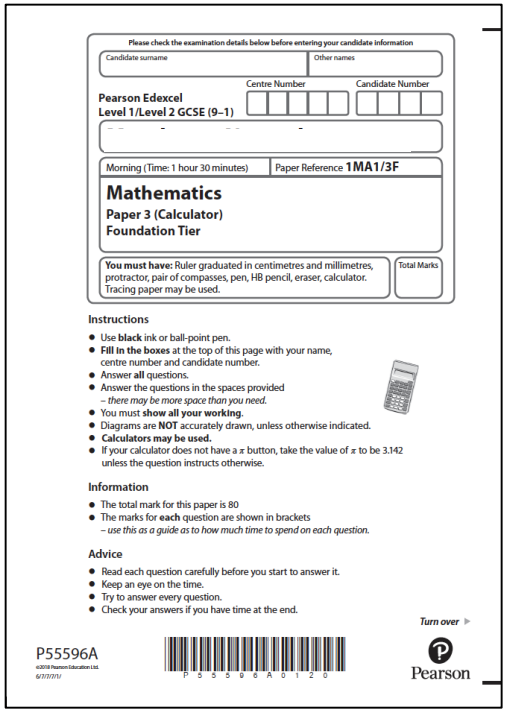
Turn over

P55587A

Pearson

4th June 2020
80 marks
1 hour 30 minutes

Paper 3
Calculator



Please check the examination details below before entering your candidate information

Candidate surname | Other names

Centre Number | Candidate Number

Pearson Edexcel
Level 1/Level 2 GCSE (9–1)

Morning (Time: 1 hour 30 minutes) | Paper Reference 1MA1/3F

Mathematics
Paper 3 (Calculator)
Foundation Tier

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used. | Total Marks

Instructions
- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information
- The total mark for this paper is 80
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice
- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over

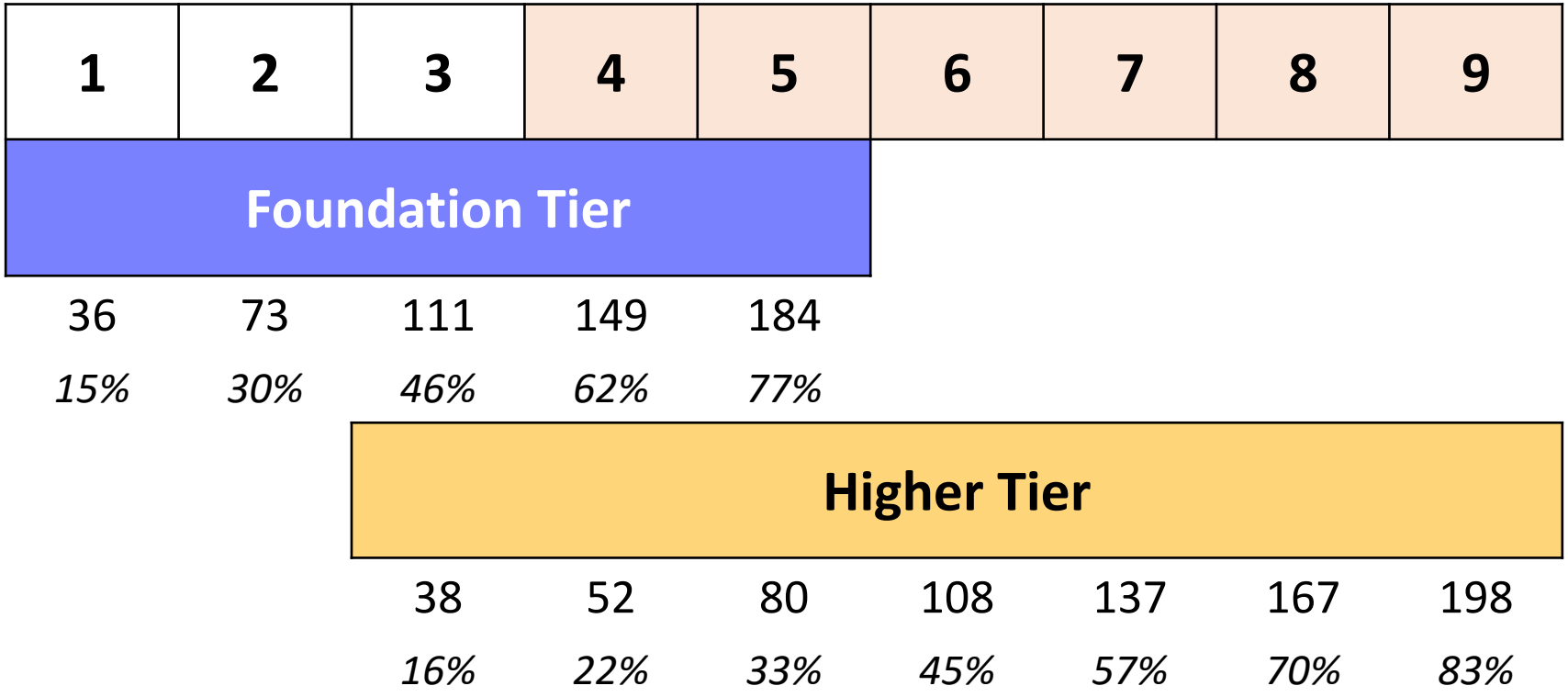
P55596A

Pearson

8th June 2020
80 marks
1 hour 30 minutes

Mathematics
Department

Marks required out for 240 for grades in Summer 2019 …

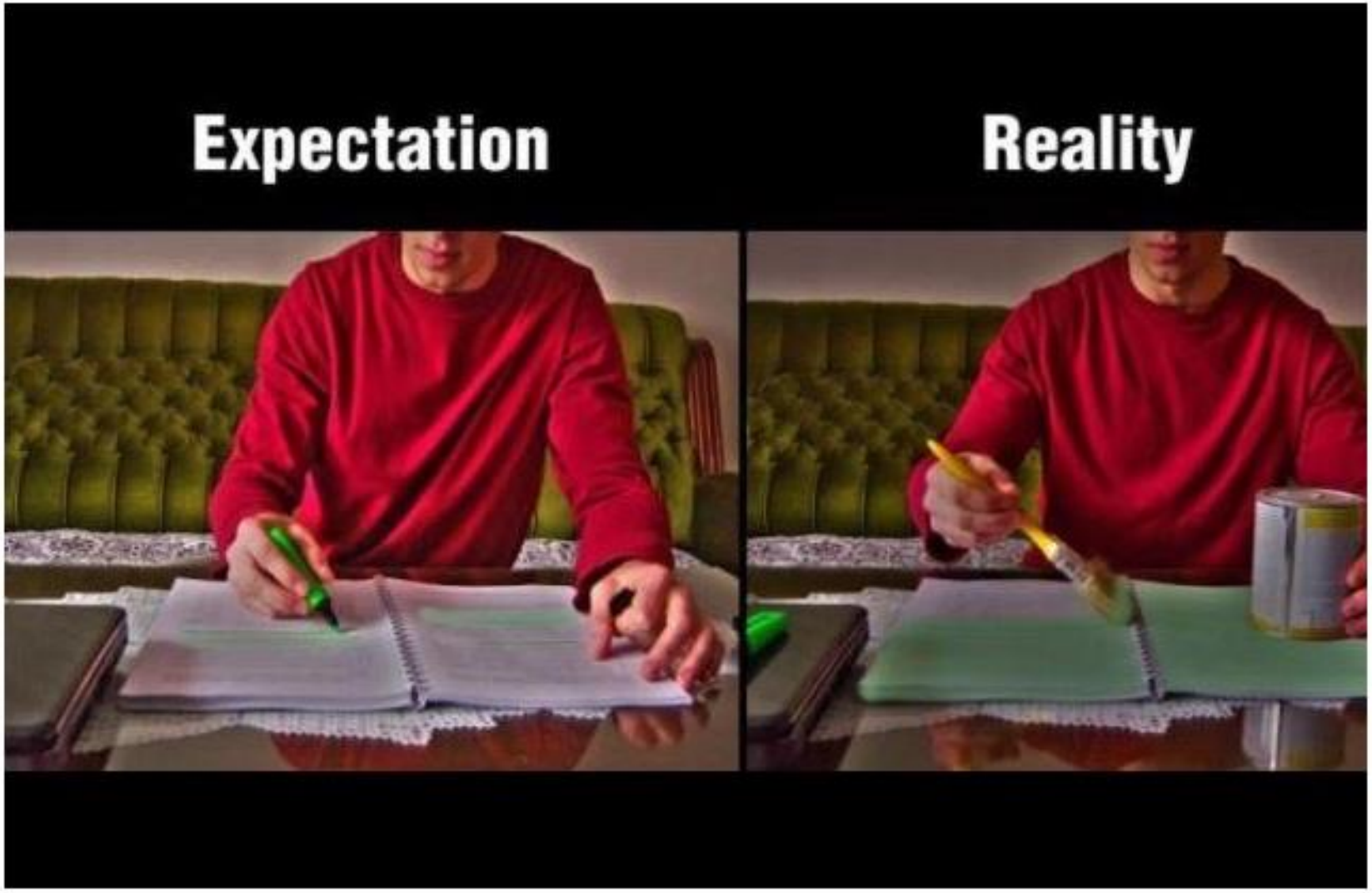


Maths revision should involve both:

- Learning and recall of key information, e.g. formulae
- Purposeful practice of skills

It should be active and should take students out of their comfort zone!

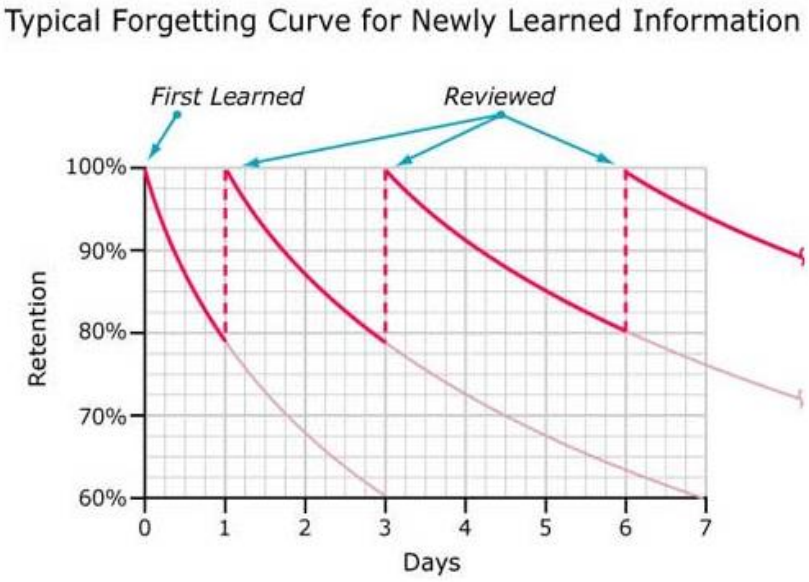
How can students revise effectively for Maths?



Mathematics
Department

Revision strategy - Interleaving

Answer a set of questions on previously covered units of work or lessons. For example, 1 question from this week, 2 questions from 2 weeks ago, 3 from 3 weeks ago and 4 from 4 weeks ago. This could be adapted to months, rather than weeks, to increase the number of topics or units of work covered.



Revision strategy - Brain Dump / Retrieval Practice

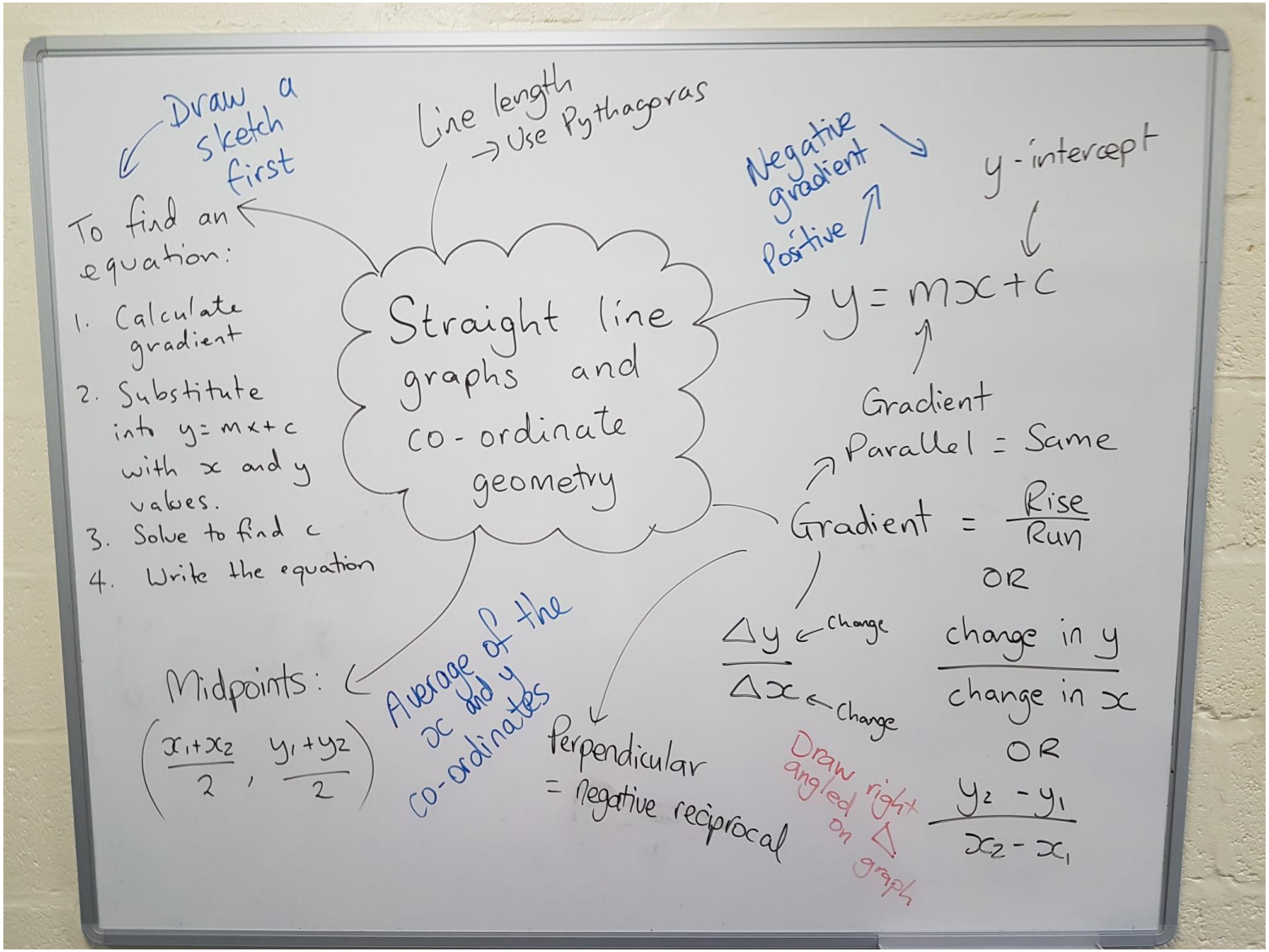
1. Read through a section of your notes (or try this from memory, without pre-reading).

2. Cover you notes up and write down as much of the information as you can remember.

3. Review what you have written. Using your notes and a different colour pen, correct any mistakes in what you have written and copy out what you did not remember.

4. Complete this process twice, with at least a two day gap.

How can students revise effectively for Maths?



Mathematics
Department

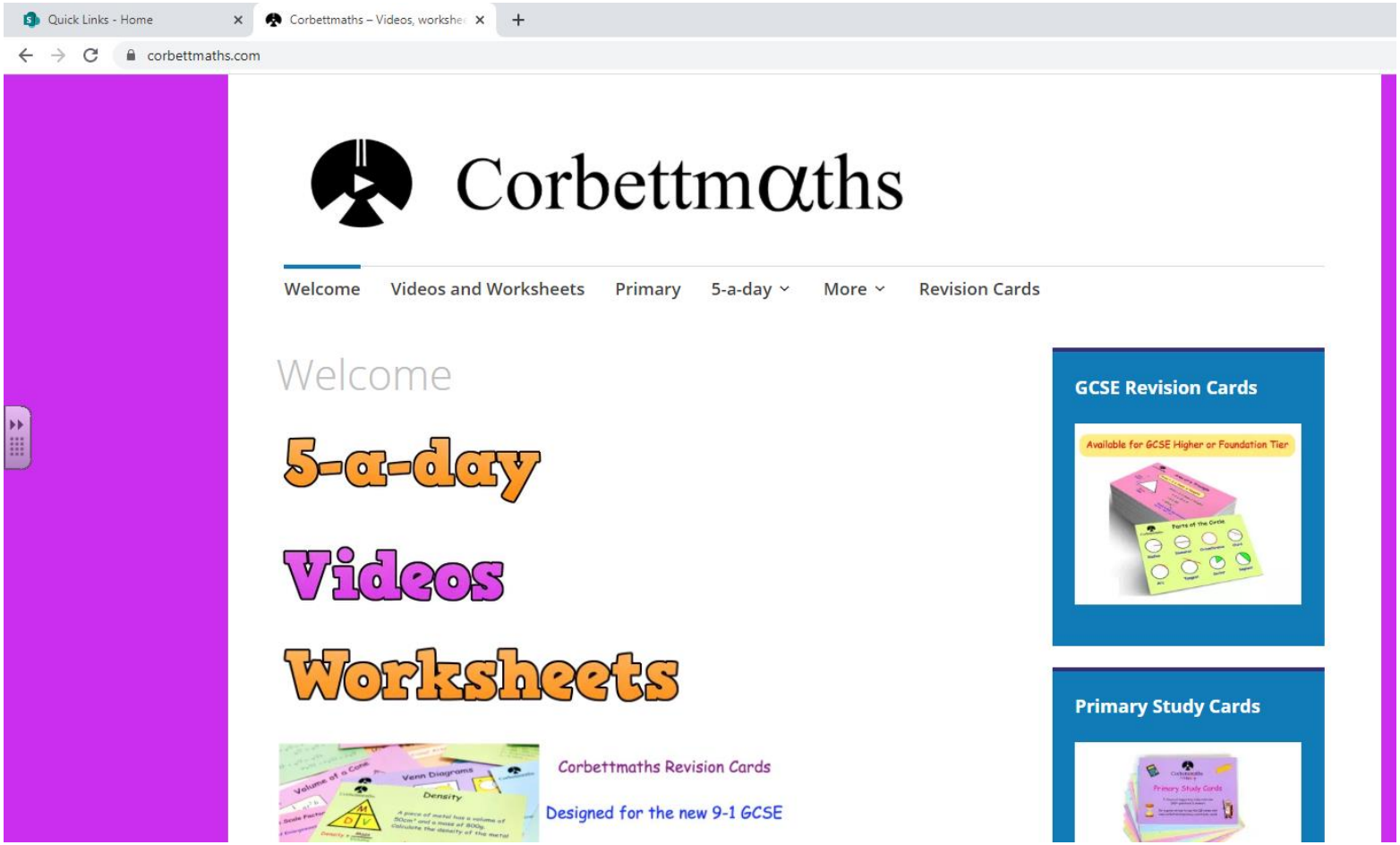
Revision strategy - Flashcards

1. Produce a set of flash cards using one of, or a range of the following options:

Front	Back
Question	Answer
Key term	Definition
Statement	True or false
Visual image	Description

2. Test yourself, or ask someone else (such as a parent, carer or friend) to test you, by looking at the front and thinking or writing what is on the back, or vice versa. Complete this process at least twice, with a one day gap between each test.

Skills Practice – Corbett Maths (corbettmaths.com)



How can students revise effectively for Maths?

Corbettmaths

Welcome | Videos and Worksheets | Primary | 5-a-day | More | Revision Cards

Videos and Worksheets

Videos and Worksheets

Click here for answers

2D shapes: names Video 1 Practice Questions Textbook Exercise

2D shapes: quadrilaterals Video 2 Practice Questions Textbook Exercise

3D shapes: names Video 3 Practice Questions Textbook Exercise

3D shapes: nets Video 4 Practice Questions Textbook Exercise

GCSE Revision Cards

Primary Study Cards

Mathematics Department

How can students revise effectively for Maths?

Corbettmaths

Welcome | Videos and Worksheets | Primary | 5-a-day | More | Revision Cards

- Further Maths
- Practice Papers
- Conundrums
- Class Quizzes
- Blog
- About

More

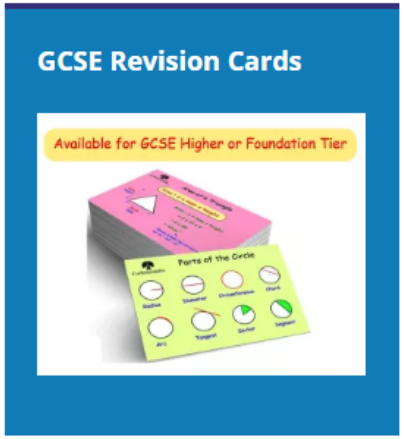
Further Maths

GCSE Practice Papers

Conundrums

Class Quizzes

Blog



Mathematics Department

How can students revise effectively for Maths?

Corbettmaths

Welcome | Videos and Worksheets | Primary | 5-a-day | More | Revision Cards

Practice Papers

GCSE 9-1 Practice Papers

GCSE A*-G Practice Papers

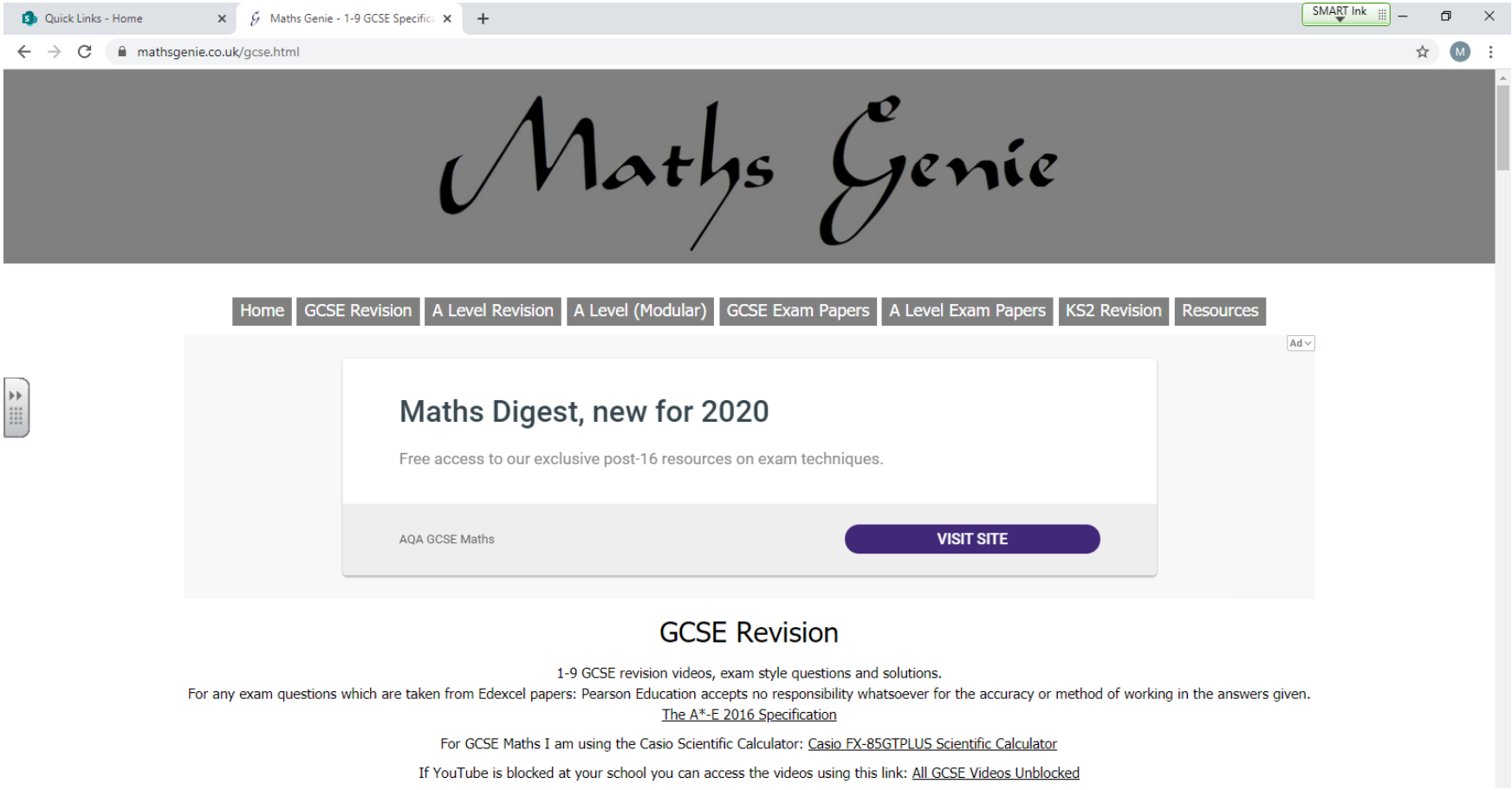
GCSE Summer 2019

GCSE Revision Cards

Primary Study Cards

Mathematics
Department

Skills Practice – Maths Genie (mathsgenie.co.uk)



How can students revise effectively for Maths?

Grade 7

Videos	Exam Questions	Exam Questions Booklet	Solutions
Surds	Exam Questions	Surds	Solutions
Bounds	Exam Questions	Bounds	Solutions
Direct and Inverse Proportion	Exam Questions	Direct and Inverse Proportion	Solutions
Quadratic Formula	Exam Questions	Quadratic Formula	Solutions
Factorising Harder Quadratics	Exam Questions	Factorising Harder Quadratics	Solutions
Algebraic Fractions	Exam Questions	Algebraic Fractions	Solutions

Mathematics
Department

How can students revise effectively for Maths?

Quick Links - Home | 7-surds-ws.pdf

mathsgenie.co.uk/resources/7-surds-ws.pdf

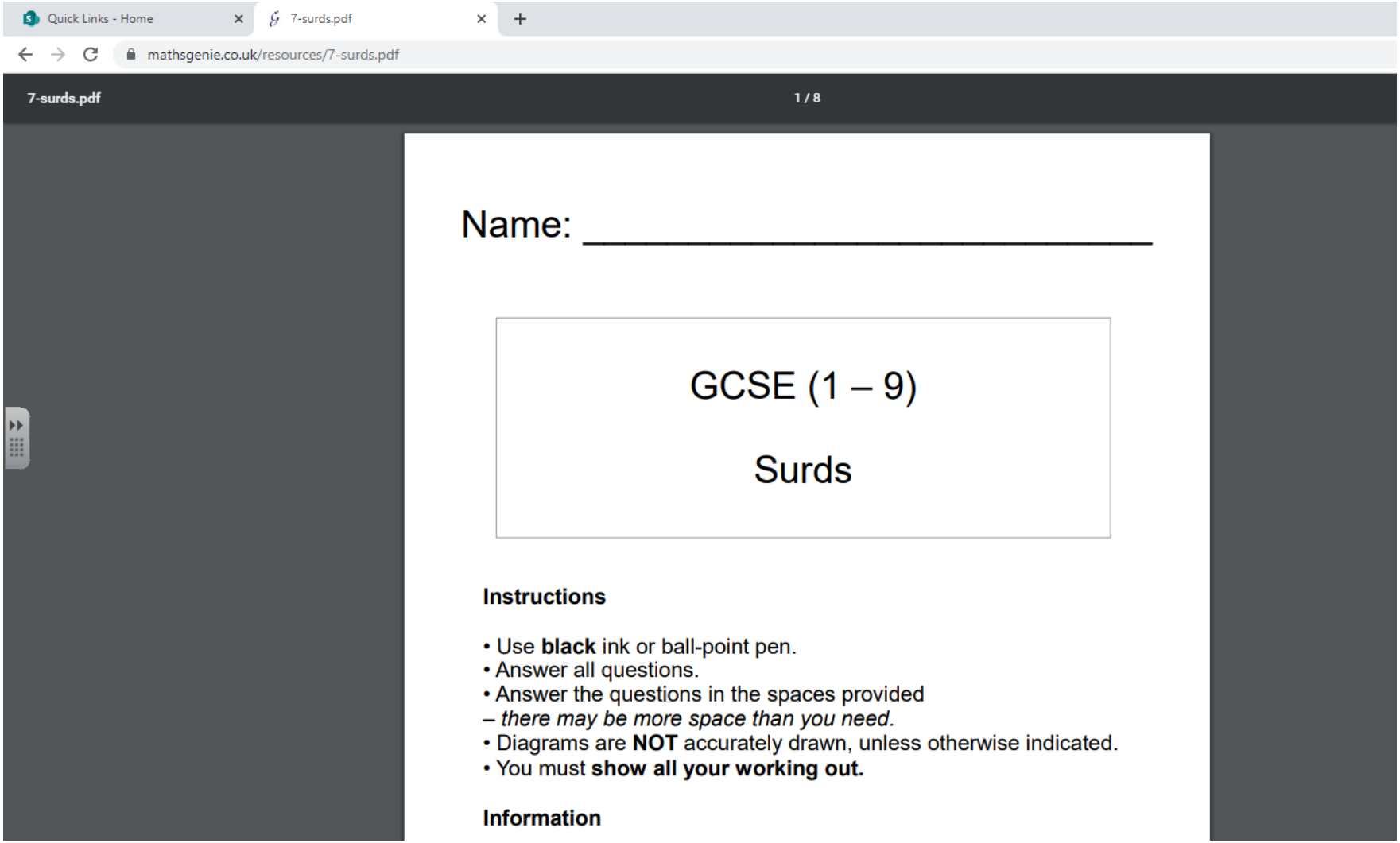
7-surds-ws.pdf 1 / 1

Mathsgenie.co.uk	Please do not write on this sheet	Mathsgenie.co.uk

1. Write $\sqrt{48}$ in the form $k\sqrt{3}$, where k is an integer. (2 marks)
2. Write $\sqrt{50}$ in the form $k\sqrt{2}$, where k is an integer. (2 marks)
3. Write $5\sqrt{27}$ in the form $k\sqrt{3}$, where k is an integer. (2 marks)
4. Write $7\sqrt{20}$ in the form $k\sqrt{5}$, where k is an integer. (2 marks)
5. Expand and simplify $(2+\sqrt{3})(2-\sqrt{3})$ (2 marks)
6. Write $(3+\sqrt{5})^2$ in the form $a+b\sqrt{5}$ where a and b are integers (2 marks)
7. Expand and simplify $(2+\sqrt{5})(1-\sqrt{5})$ (2 marks)
8. Write $(3-\sqrt{2})^2$ in the form $a+b\sqrt{2}$ where a and b are integers (2 marks)
12. Rationalise the denominator $\frac{1+\sqrt{5}}{\sqrt{2}}$ (2 marks)
13. Simplify $\frac{3+\sqrt{6}}{3}$ (2 marks)
14. Simplify fully $\frac{(4+2\sqrt{3})(4-2\sqrt{3})}{\sqrt{11}}$ You must show all your working. (3 marks)
15. Show that $\frac{5+2\sqrt{3}}{2+\sqrt{3}}$ can be written as $4-\sqrt{3}$ (3 marks)
16. Show that $\frac{3\sqrt{3}+3}{3+\sqrt{3}}$ can be written as $\sqrt{3}$ (3 marks)
17. Show that $\frac{1}{\frac{1}{\sqrt{2}}+\sqrt{2}}$ can be written as $\frac{\sqrt{2}}{3}$

Mathematics Department

How can students revise effectively for Maths?

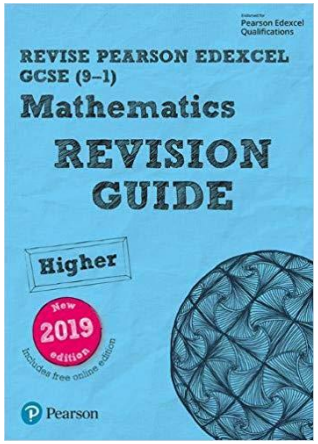


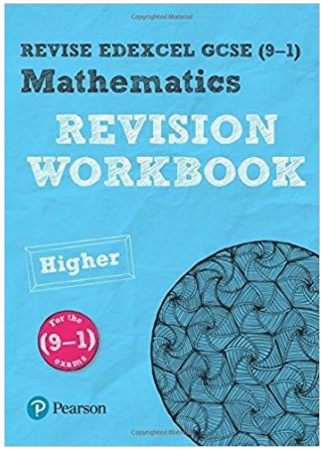
Mathematics
Department

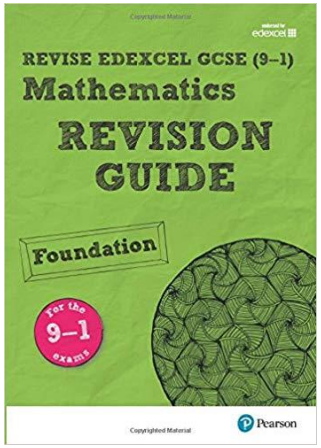
Recommended items for GCSE Maths

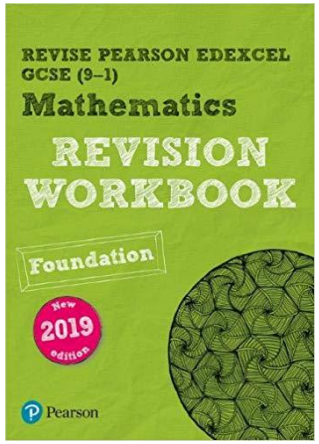
Casio FX83 scientific calculator

Pearson Edexcel GCSE (9-1) revision guide and workbook





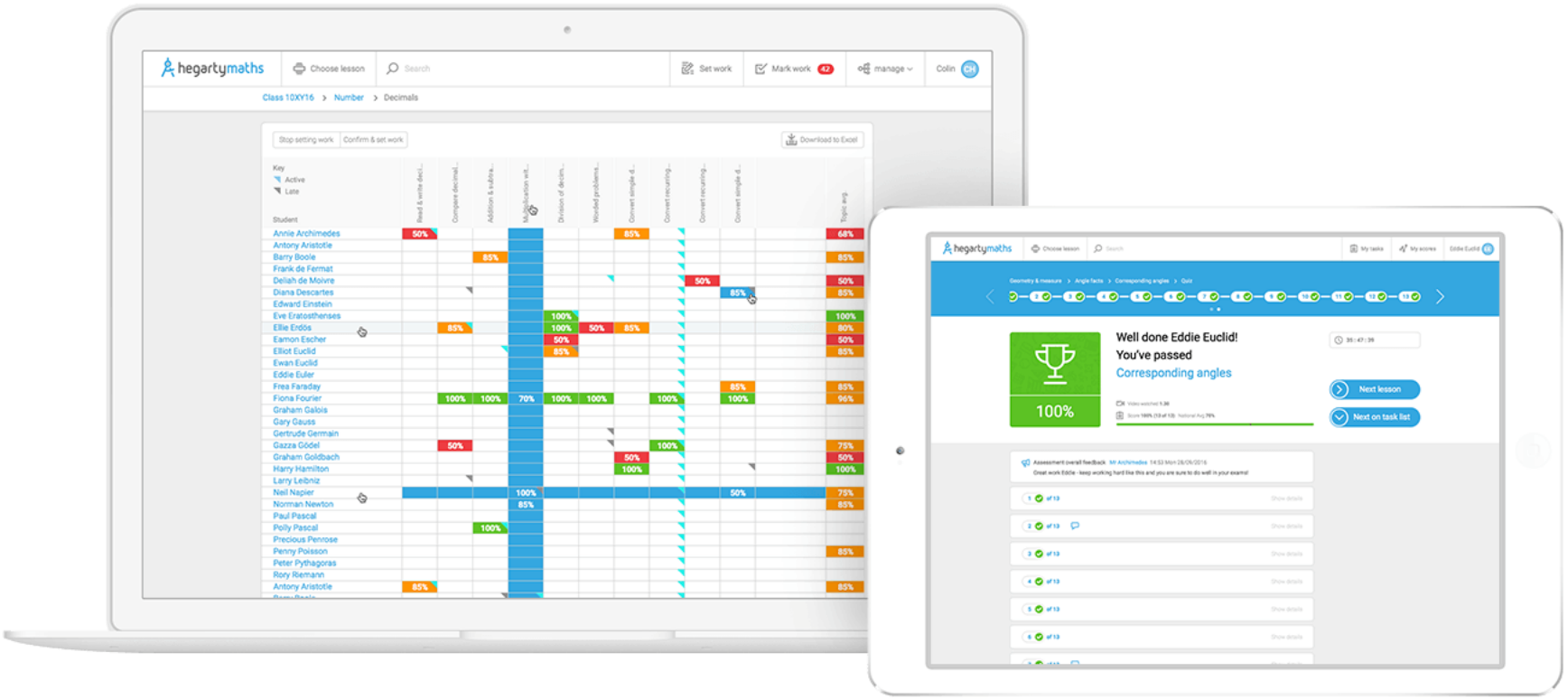




Mathematics Department

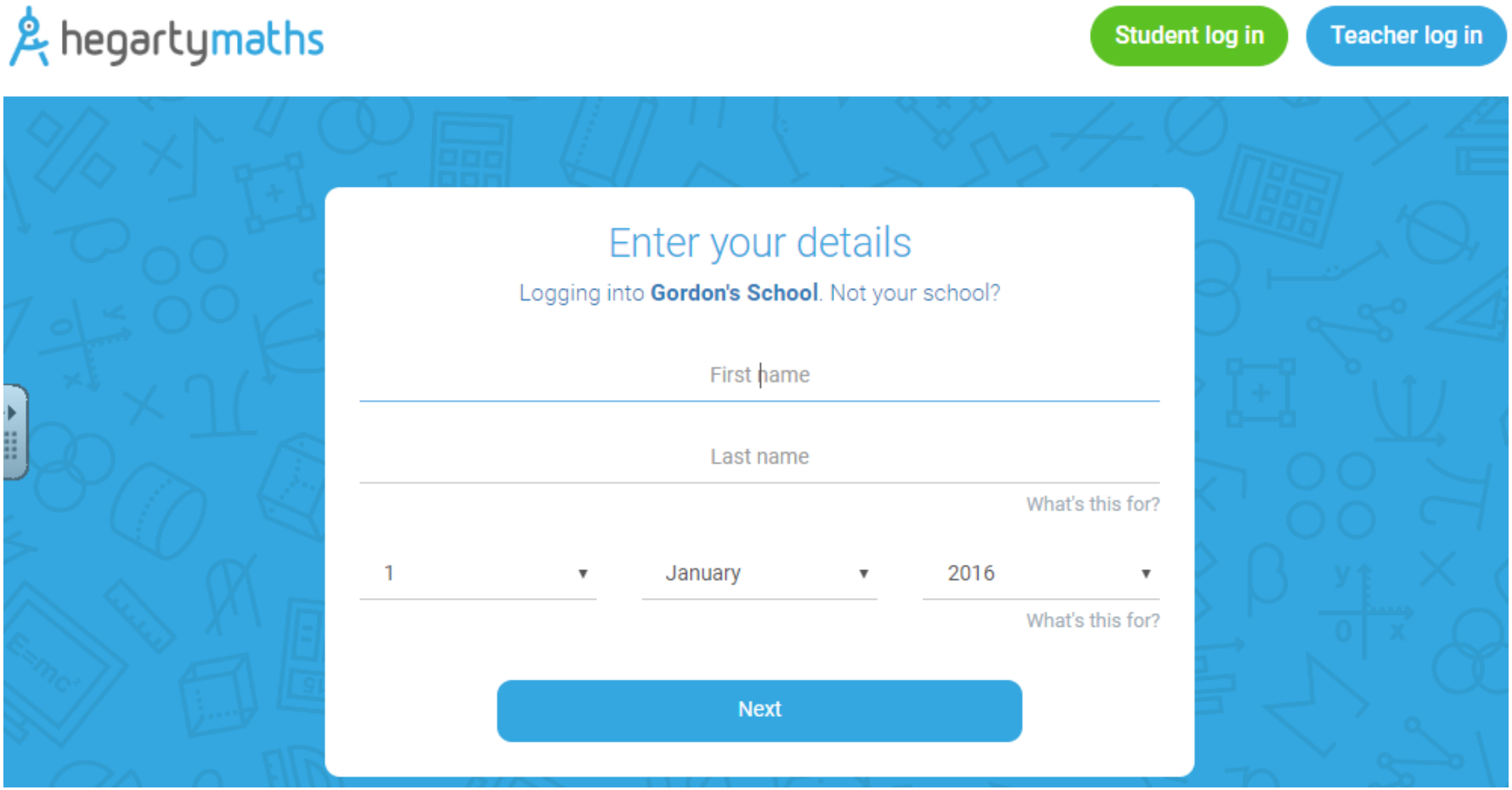
How does *Hegarty Maths* work and what are the benefits?

hegartymaths



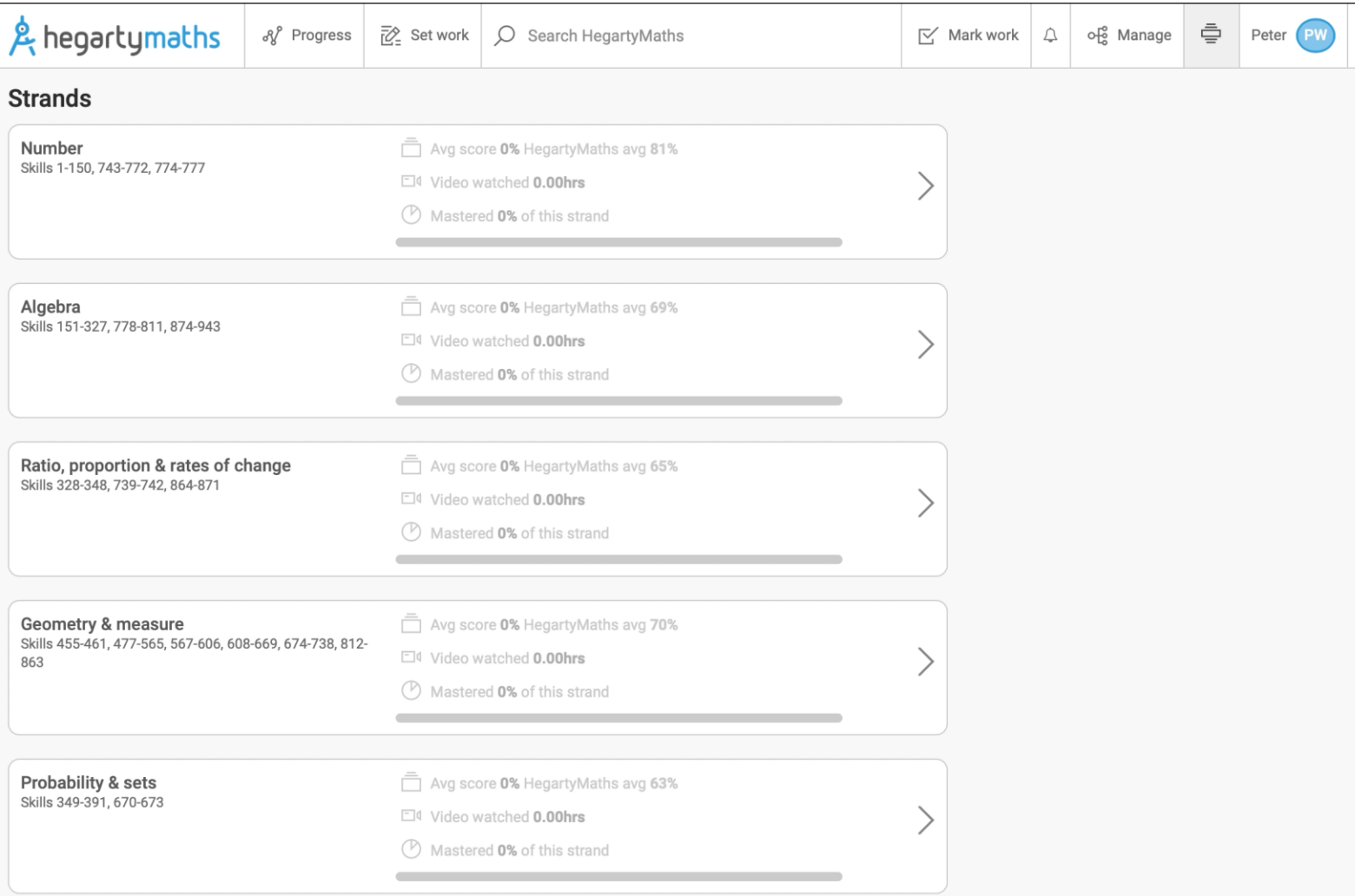
Mathematics
Department

How does *Hegarty Maths* work and what are the benefits?



Mathematics
Department

How does *Hegarty Maths* work and what are the benefits?



Mathematics
Department

How can students make sure they are revising the correct skills?

Assessment Title: Year 11 Maths Mock Paper 1 - Higher Tier

12th November 2019

Questions	Question Title	Score	**NSA:** Hegarty Maths Clip Number
1a	Adding mixed numbers	2 / 2	66
1b	Dividing mixed numbers	2 / 2	70
2	Share in a given ratio	3 / 3	333
3	Percentage profit	4 / 4	760
4a	Speed, estimate complex calculations	1 / 3	719, 131
4b	Speed	1 / 1	719
5a	Plans and elevations	1 / 2	838
5b	Surface area of a pyramid	3 / 4	0
6	Gradient, quadrilaterals	3 / 5	199, 204, 824
7	Combined transformations	1 / 2	657
8	Share in a given ratio, area of a triangle	4 / 4	332, 557
9a	Index form (powers of unit fractions)	0 / 1	108
9b	Index form (power of 0 and 1)	1 / 1	103
9c	Index form (powers of non-unit fractions)	0 / 2	109
10a	Box plots	3 / 3	435
10b	Box plots	2 / 2	436
11	Circle theorems	0 / 5	599, 603, 605
12	Direct algebraic proof	0 / 4	325, 327
13	Expand single brackets with surds	0 / 2	116

Mathematics
Department