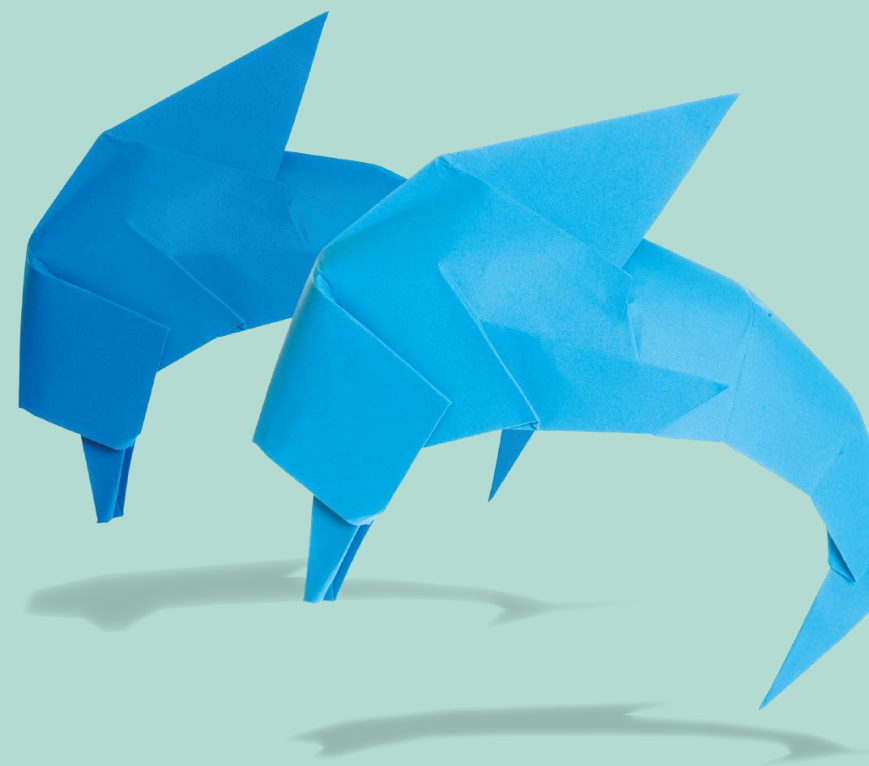


# GCSE Mathematics

Delivering GCSE Maths:  
Everything you need to know

Part 5 – Exam preparation hints and tips

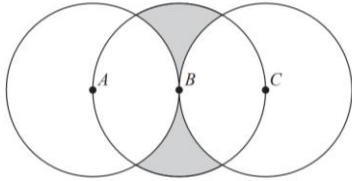
Christian Seager & Melanie Muldowney



## The question of 2022 that everyone was talking about ...

The diagram shows three circles, each of radius 4 cm.

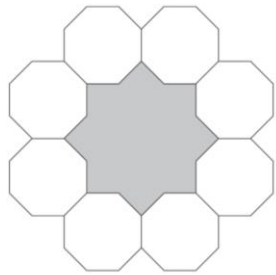
The centres of the circles are  $A$ ,  $B$  and  $C$  such that  $ABC$  is a straight line and  $AB = BC = 4$  cm.



Work out the total area of the two shaded regions.  
Give your answer in terms of  $\pi$

## The questions of 2023 that everyone was talking about ...

24 The diagram shows 8 identical regular octagons joined to enclose a shaded shape.



Each octagon has sides of length  $a$ .

Find, in terms of  $a$ , an expression for the area of the shaded shape.  
Give your answer in the form  $p(2 + \sqrt{2})a^2$  where  $p$  is an integer.  
You must show all your working.

22 There are only blue pens and red pens in a box.

The number of blue pens is four times the number of red pens.

Rita takes at random one pen from the box.

She records the colour of the pen and then replaces it in the box.

Rita does this  $n$  times, where  $n \geq 2$

Write down an expression, in terms of  $n$ , for the probability that Rita gets a blue pen at least once and a red pen at least once.



# This session ...

Last minute hints and tips to maximise the final 22 days!

Ideas to embed longer term

What can we have on the radar for year 10 etc. now



# Remember ...

## Delivering GCSE Maths: Everything you need to know

Part 1 – The Basics (4/10/23)

Part 2 – Tools and Resources (29/11/23)

Part 3 – Marking Essentials (10/01/24)

Part 4 – Teaching Methods (6/03/24)

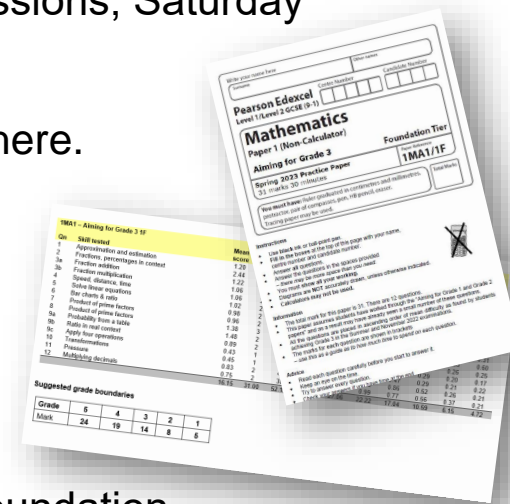
# Case Study Time Line

	YEAR 9	YEAR 10	YEAR 11
Half Term 1		Baseline assessment P1 (1 x non calc) Have groups as close to tiering 'ideal' as possible.  Analyse performance on Crossover Questions (Crossover Papers available on Emporium)  Share 'Re-Ordered Papers' in class if available	Baseline assessment P1 (1 x non calc) <i>(Final call for any students to start higher)</i>  Intervention/support starts and shared with parents: <ul style="list-style-type: none"> <li>- After school revision</li> <li>- Tutor time maths ('Aiming for papers')</li> <li>- Plan for half term sessions/Saturday schools</li> </ul>
OCTOBER HALF TERM			
Half Term 2		Internal Assessment P2 (following from Baseline)	Full mocks 1 (Use P1, P3 as P2 and P3(2) a 'Shadow Paper')
CHRISTMAS			
Half Term 3	Start to build in '1 Marker Starters' over year 9		<i>Final call for any student to join foundation</i> Ideally tiering sorted  'Final countdown' support shared with parents
FEBRUARY HALF TERM			
Half Term 4		Internal Assessment P3 (completing the suite of papers and 'rough' grades can be created)	Possible final tier changes (based on attendance etc.) Full mocks 2 (Use P1, P3 as P2 and P3(2) a 'Shadow Paper')  Rough final deadline for exam entries/ammendments
EASTER			
Half Term 5	Conclude KS3 Content		Final Paper 1
MAY HALF TERM			
Half Term 6	Expose to Full GCSE Paper in EoY assessments 1 x foundation non calc (Possibly HA students try higher)	Full set of 3 papers if possible on the 'ideal' tier for EoY assessments Use P1, P3 as P2 and P3(2) a 'Shadow Paper'  Groups ready for Sep (ideally final set changes now) Communicate to parents: Tiering for Sep, QLAs from EoY assessments, 'Practice Sets' and 'Themed Papers' for over summer	Final Paper 2 and 3   All starts again!
SUMMER			
**Script Viewer and ResultsPlus at the ready!** Resources on Pearson Emporium			

# Year 11

- Baseline assessment of 1F or H. The 'ideal' F/H split. Last call for anyone 'starting' higher.
- 'Interventions' start ASAP. After school revision, half term sessions, Saturday schools, Core PE slots etc etc
- Tutor time maths. The '**Aiming For**' papers work really well here. Particularly the '**Aiming for 3**' papers.
- Introduce the 'Foundation Paper Challenges' in the occasional lessons/revision sessions etc. (aids students who will move from Higher to Foundation later).
- Full mocks (use all 3 papers, arrangement as per end of year). Following these, last call for anyone 'starting' foundation.
- Final countdown and strong parent communication now established.
- Second set of mocks (ideally 3 papers again).

**\*\*Exam aid training over the course of year 11\*\***



# Year 11

Write your name here  
Surname  
Other names  
Candidate Number  
Centre Number

**Pearson Edexcel**  
Level 1/Level 2 GCSE (9-1)

**Mathematics**  
Paper 1 (Non-Calculator)

**Aiming for Grade 3**

**Spring 2023 Practice Paper**  
31 marks 30 minutes

**Foundation Tier**  
Paper Reference  
**1MA1/1F**

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil. 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 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 stated otherwise.
  - Calculators may not be used.

- Information**
- The total mark for this paper is 31. The marks for each question are shown in brackets.
  - This paper assumes students have written "answers" and as a result may have all the questions placed in ascending order of difficulty.
  - All the questions are placed in the Summer 2023 exam.
  - The marks for each question are shown in brackets.
  - The marks for each question are shown in brackets.
  - – use this as a guide as to how many marks each question is worth.

- 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.

1MA1 – Aiming for Grade 3 1F				Edexcel averages: mean scores of students who achieved grade							
Qn	Skill tested	Mean score	Max score	Mean %	ALL	5	4	3	2	1	U
1	Approximation and estimation	1.20	2	60	1.20	1.89	1.74	1.36	0.73	0.22	0.07
2	Fractions, percentages in context	2.44	4	61	2.44	3.74	3.33	2.63	1.57	0.90	0.79
3a	Fraction addition	1.22	2	61	1.22	1.92	1.73	1.31	0.80	0.35	0.11
3b	Fraction multiplication	1.06	2	53	1.06	1.73	1.40	1.02	0.72	0.54	0.40
4	Speed, distance, time	1.06	2	53	1.06	1.72	1.31	1.12	0.82	0.52	0.52
5	Solve linear equations	1.02	2	51	1.02	1.83	1.40	1.09	0.65	0.42	0.43
6	Bar charts & ratio	0.98	2	49	0.98	1.66	1.33	1.02	0.67	0.46	0.40
7	Product of prime factors	0.96	2	48	0.96	1.79	1.48	0.98	0.46	0.13	0.03
8	Product of prime factors	1.38	3	46	1.38	2.48	1.95	1.45	0.89	0.48	0.31
9a	Probability from a table	1.48	2	74	1.48	1.90	1.76	1.56	1.21	0.83	0.60
9b	Ratio in real context	0.89	2	45	0.89	1.80	1.40	0.95	0.41	0.26	0.25
9c	Apply four operations	0.43	1	43	0.43	0.69	0.58	0.45	0.29	0.20	0.17
10	Transformations	0.45	1	45	0.45	0.73	0.62	0.47	0.29	0.21	0.22
11	Pressure	0.83	2	42	0.83	1.69	1.20	0.86	0.52	0.26	0.21
12	Multiplying decimals	0.75	2	38	0.75	1.49	0.99	0.77	0.56	0.37	0.21
		16.15	31.00	52.10	16.15	27.06	22.22	17.04	10.59	6.15	4.72

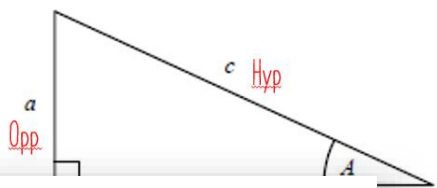
**Suggested grade boundaries**

Grade	5	4	3	2	1
Mark	24	19	14	8	5

# Exam Aid Training

## Tick or Trash

### Pythagoras' Theorem and Trigonometry



In any right-angled triangle where  $a$ ,  $b$  and  $c$  are the length of the sides and  $c$  is the hypotenuse:

$a^2 + b^2 = c^2$  ✓

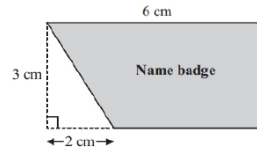
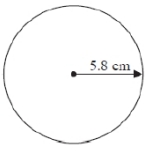
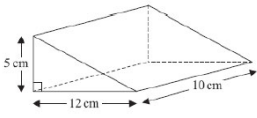
In any right-angled triangle  $ABC$  where  $a$ ,  $b$  and  $c$  are the length of the sides and  $c$  is the hypotenuse:

$\sin A = \frac{a}{c}$   $\cos A = \frac{b}{c}$   $\tan A = \frac{a}{b}$  ✓

$\sin A = \frac{Opp}{Hyp}$   $\cos A = \frac{Adj}{Hyp}$   $\tan A = \frac{Opp}{Adj}$

formula sheet to remind yourself about SOH CAH TOA

### Using the Formula Sheet (Foundation Tier)

<p>Janice cuts a triangle from a rectangular piece of metal. She uses the rest of the metal to make a name badge.</p> <p>The rectangle has length 6 cm and width 3 cm. The right-angled triangle has base 2 cm and height 3 cm.</p> <p>Work out the area of the name badge.</p> 	<p>This circle has a radius of 5.8 cm.</p> <p>Work out the area of the circle. Give your answer to 1 decimal place.</p> 
<p>A circle has a diameter of 140 cm. Work out the circumference of the circle. Give your answer correct to 3 significant figures.</p>	<p>Work out the volume of the triangular prism.</p> 





# Last minute

Last minutes decisions can be down to many factors:

- Success on tiers building up to this point
- Behaviour
- Attitude
- Staffing issues
- ATTENDANCE!



etc etc

# Last minute

- Foundation paper challenges over year 11 (maybe even year 10) to aid movement from H to F
- Ensure **Crossover** content is covered by all students (HA via starters?)
- **Aiming For Papers** built into interventions
- Good parent communication directing what you want to be covered at home (Final Countdown).

# Final Countdown and parent communication

Countdown to your final Maths exam .  
Higher Tier only ... Part 1 (2020)  
Integers, Four Operations and Product Rules


	Marks	Actual	 
Q1. Use one calculation to solve similar	3		
Q2. Metric conversions	3		
Q3. Multiply and subtract fractions	3		
Q4. Multiply and subtract mixed fractions	6		
Q5. Product rule	3		
Q6. Combinations	2		
Q7. Proportional reasoning	4		
Q8. Area problem	4		
Q9. Use of calculator / Rounding / Standard form	5		
Q9. Fractions & percentages	4		

NON-CALCULATOR UNLESS SPECIFIED

# SEPTEMBER... A LITTLE BIT OF MATHS EVERY DAY


## Just Maths

<p>1. A box weighs 10 grams. Five boxes weigh 50 grams. How much do 10 boxes weigh?</p> <p>2. A box weighs 10 grams. Five boxes weigh 50 grams. How much do 14 boxes weigh?</p> <p>3. A box weighs 10 grams. Five boxes weigh 50 grams. How much do 14 boxes weigh?</p>	<p>4. Calculate: <math>(3.7 - 9) \times (5 + 1)</math></p> <p>5. Round 0.0000176705 to 4 significant figures</p> <p>6. What is the remainder when 250 is divided by 8?</p>	<p>7. Simplify fully: <math>\frac{4m^2 \times m^3}{2m^4}</math></p> <p>8. Write down the value of: <math>2^{10}</math></p> <p>9. Simplify: <math>3^2 \times 2a \times 5</math></p>	<p>10. Draw three 68240 for the 2 years of an adult's life. How many minutes will that be?</p> <p>11. Find the average of the first 100 natural numbers. Find the average of the first 1000 natural numbers. Find the average of the first 10000 natural numbers.</p> <p>12. Write 345 as a product of its prime factors.</p>
<p>13. The total cost of 4 magazines is £6.80. Find the cost of each magazine.</p> <p>14. Find the cost of 10 magazines.</p> <p>15. How much do 10 magazines cost?</p>	<p>16. A square is made up of nine identical rectangles. The area of this complete square is 360 <math>\text{cm}^2</math>. Calculate the length of one of the rectangles.</p>	<p>17. Simplify: <math>3^2 \times 3p</math></p> <p>18. Find the value of: <math>8 \times 2g</math> when <math>a = 7</math> and <math>g = 45</math>.</p>	<p>19. What is the median number?</p> <p>20. 5, 5, 4, 4, 5, 15</p>
<p>21. Write 100 million in standard form.</p> <p>22. Write 100 million in standard form.</p> <p>23. Write 100 million in standard form.</p>	<p>24. What is the median number?</p> <p>25. Give your answer correct to 2 decimal places.</p>	<p>26. Simplify: <math>3^2 \times 3p</math></p> <p>27. Find the value of: <math>8 \times 2g</math> when <math>a = 7</math> and <math>g = 45</math>.</p>	<p>28. Draw three 68240 for the 2 years of an adult's life. How many minutes will that be?</p> <p>29. Find the average of the first 100 natural numbers. Find the average of the first 1000 natural numbers. Find the average of the first 10000 natural numbers.</p> <p>30. Write 345 as a product of its prime factors.</p>



## REMEMBER: The best way to revise maths is to "do Maths!"

Countdown to your final Maths exam ...  
Crossover ... Part 2 (2020)

	Marks	Actual	
Q1. Rounding & error intervals (Clip 9)	1		 Co  Inte  Examiners Report Q1. Since it was a Parts (a) and or 3.7  Q2. Many student grams as the significant nu students did a calculator
Q2. Exchange rates (Clip 8)	3		
Q3. Venn Diagrams (Clip 53)	6		
Q4. Rounding	1		
Q5. Exchange rates (Clip 8)	6		
Q6. Exchange rates (Clip 8)	3		
Q7. Venn Diagrams (Clip 53)	6		
Q8. Rounding & error intervals (Clip 9)	2		
	28		

NON-CALCULATOR UNLESS SPECIFIED



Countdown to your final Maths exam ...  
Higher Tier only ... Part 1 (2020)  
Integers, Four Operations and Product Rule  
Examiners Reports & Markscheme

## Examiners Reports

Q1. Since it was rare to see any working shown it was not always clear how an answer had been arrived at. Parts (a) and (c) were best answered, but there were many wrong answers to part (b), particularly 0.37 or 3.7

**Q2.** Many students did not read or fully comprehend the information given in this question. Some read 150 grams as the weight of a half of the hosiery, many multiplied 20 by a half instead of dividing. A significant number forgot to add on the weight of the reel and left an answer of 6000g or 6kg. Some students did make mistakes in the addition of the 1.4, suggesting perhaps that a number did not have a calculator. Some students wrote their final answer as 7400kg and failed to gain full marks.

Q3. Part (a) was found to be straightforward by the majority of the entry. Of the rest, there were some who first found a common denominator and then tried to multiply numerators together and denominators together, which, if correct, would gain the one mark available. More often the 'common' denominator was left as that and the numerators multiplied together. There were many cases of  $2 \times 1 = 3$

In part (b) candidates were expected to find a suitable common denominator (invariably 15 for those who knew what to do). There were a surprising number of candidates who subtracted numerators and denominators to get, for example,  $\frac{2}{3}$  or who found the correct common denominator but did not change the numerators. A small number of candidates added instead of subtracted – they lost the accuracy mark.

**Q4.** In part (a) the majority of students were able to convert at least one of the given fractions to an improper fraction. Some students confused techniques for other operations at this point and tried to express the fractions with a common denominator. Those that were successful in achieving the correct multiplication were often unable to convert back to a mixed fraction in its simplest form. The most common answers were  $\frac{42}{15}$ ,  $\frac{14}{5}$  or  $\frac{21}{15}$ .

In part (b) students generally scored full marks or no marks. Many who converted to improper fractions were unable to convert these to fractions with the same common denominator. Often they found the common denominator but failed to find the correct numerator. Very few subtracted the whole numbers and then dealt with the fractions. There appears to be widespread misunderstanding of the processes involved.

**Q5.** Students found more success with this question, the main inhibitor being a failure to write down all the steps and working needed to “show that” 1335 was the resulting number. There were some 2-way tables used, but students did not know what to do with such a diagram, once complete.

**Q6.** This question targeted a new area of the specification and it was pleasing to see the majority of students scored at least one mark on this question. Many students obtained one mark for  $215 \div 17 = 12.647$ , and some went on to correctly indicate that it is not possible to have 0.647, of a rose tree or that the answer was not an integer when an integer would be required. An alternative method seen was to show  $12 \times 17 = 204$  and  $13 \times 17 = 221$  and an explanation that there could not be a number of trees between 12 and 13.

The main errors seen in this question, were to show a correct calculation with no interpretation scoring one mark, or to show  $17 \times 17 = 289$ , which has no meaning in this question or to give a vague reason e.g. '215 can't be divided by 17' the latter two do not score any marks.


**Q7.** This was successfully completed by most candidates. For the rest the first problem was to decide the number of packages and parcels: those misinterpreting the ratio frequently gave incorrect answers of

# In class now!

## One/Two markers

### One Markers

(Unless otherwise stated)

 Pearson

Pearson | Blackboard

1 Work out the value of $2^4$	6 Here are four digits: 5 6 1 9 Write down the smallest possible two digit number that can be made with two of the digits
2 Write 7.26451 correct to 3 decimal places	7 Work out $2 \times 7 + 10$
3 Simplify $7 \times e \times f \times 8$	8 Write down a multiple of 6 that is between 40 and 50
4 Write $\frac{4}{5}$ as a percentage	9 Write in order of size. Start with the smallest number 0.078   0.78   0.87   0.708
5 Write 20% as a fraction	10 Change 4560 g into kg

# Language of 'crossover' – do they know this?

JustMaths

GCSE Mathematics

Scheme of Work

Crossover (2021)

JM Clip No.	Topic	JM Clip No.	Topic
01	Two Way Tables		Pythagoras
02	Frequency Trees		Trig - Finding Sides
03	Rounding and Error Intervals		Trig - Finding Angles
04	Estimation		Trig - Non Calculator
05	Use of Calculator		Pythagoras with Trig
06 / 07	Product of Primes/HCF/LCM		Circles
08	Real-life Multiples		Arcs and Sectors
09 / 10	Fractions		Surface Area and Volume
11 / 12	Ratio		Sampling
13	Direct Proportion		Averages
14 15 16	Proportion - Best Value		Averages from a Table
	Proportion - Recipes		Averages from Grouped Data
	Proportion - Exchange Rates		Frequency Diagrams
17	Inverse Proportion		Scatter Graphs
18 / 19	Percentages		Time Series
20 / 21	Interest and Growth		Pie Charts
	Depreciation and Decay		Coordinate Geometry
22	Reverse Percentages		Straight Line Graphs
23	Index Laws		Non-linear Graphs
24	Expand and Simplify		Speed, Distance, Time
25	Sequences		Compound Measures
26	Inequalities		Real Life Graphs
27	Solving equations		Congruence
28 / 29	Forming and Solving Equations		Similar Shapes
30 / 31	Factorising		Reflections
32	Subject of		Rotations
33 / 34	Standard Index Form		Translations
35	Alternate/Corresponding Angles		Enlargements
36	Interior and Exterior Angles		Combined Transformations
37	Plans and Elevations		Vectors
38	Constructions		Probability from a Table
39	Bearings		Probability Trees
			Venn Diagrams
			Simultaneous Equations

Adapted by JustMaths from the Pearson/Edexcel 9-1 Scheme of Work to support the JustMaths Crossover (2021)

READY?

A ratio describes how the size of one quantity compares to the size of another quantity.

e.g. 1 Mel and Chris share £80 in the ratio 3 : 5. How much money does each person receive?

Mel 3 Chris 5

£80 is the total amount shared. £80 ÷ 8 = £10. £10 × 3 = £30. £10 × 5 = £50.

Mel = 3 × £10 = £30 Chris = 5 × £10 = £50

e.g. 2 Mel and Chris share some money in the ratio 3 : 5. If Chris receives £40, how much money did they share?

Mel 3 Chris 5

£40 is the amount Chris receives. £40 ÷ 5 = £8. £8 × 3 = £24. £8 × 5 = £40.

Mel = 3 × £8 = £24 Total amount shared = £24 + £40 = £64

e.g. 3 Mel and Chris share some money in the ratio 3 : 5. Chris receives £24 more than Mel. How much money did Mel receive?

Mel 3 Chris 5

£24 is the difference. £24 ÷ 2 = £12. £12 × 3 = £36. £12 × 5 = £60.

Mel = 3 × £12 = £36

e.g. 4 Mel, Chris and Fatima share some money in the ratio 3 : 5 : 7. Fatima gets £14 more than Mel. How much money did Chris receive?

Mel 3 Chris 5 Fatima 7

£14 is the difference between Mel and Fatima. £14 ÷ 4 = £3.5. £3.5 × 3 = £10.5. £3.5 × 5 = £17.5. £3.5 × 7 = £24.5.

Mel = £10.5 Chris = £17.5 Fatima = £24.5

e.g. 5 Mel and Chris share some money in the ratio 1 : 3. What fraction of the total does Mel receive?

Mel 1 Chris 3

1 part out of 4 parts in total. 1/4

GO!

RATIO 1

The ratio of the angles in a triangle is 1 : 5 : 6. Fatima thinks the triangle is right-angled. Do you agree? Explain your answer.

Essential support for GCSE (9-1) mathematics

READY? SET? GO!

The Foundation & Higher  
Revision guide / Workbook / Study guide  
(suitable for: both tiers ✓ all exam boards ✓)

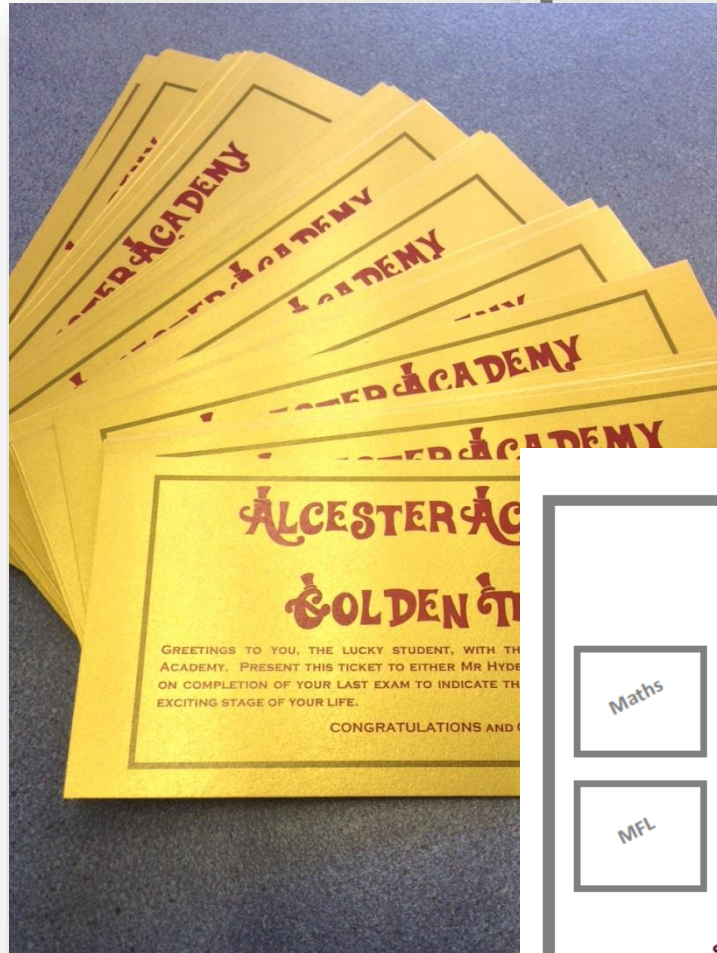
Written by the teams at  
Kangaroo maths JustMaths

Not all questions were on both H and F, but ALL are Crossover topics ... ResultsPlus (and Script Viewer!)

Questions			
This cohort's best 10 questions in relation to the Edexcel average were:			
Question			Score
Q23a (Paper 3F - CALCULATOR (F))	Trigonometry		1.36/2
Q26 (Paper 1F - NON CALCULATOR (F))	Vectors		1.68/2
Q26 (Paper 3F - CALCULATOR (F))	Angles in polygons		2.88/5
Q14a (Paper 3F - CALCULATOR (F))	Stem and Leaf!!!!		2.8/3
Q18a (Paper 1F - NON CALCULATOR (F))	Set notation		1.48/2
Q12 (Paper 2F - CALCULATOR (F))	Pie Charts		2.76/3
Q24b (Paper 2F - CALCULATOR (F))	Quadratic graphs		1.12/2
Q16c (Paper 1F - NON CALCULATOR (F))	Solving equations		1.64/2
			0.88/2
			0.6/1
Question	Score	Performance	Edexcel Ave: ALL
Q26a (Paper 3F - CALCULATOR (F))	0.75/1	<div><div></div></div>	0.19/1
Q24 (Paper 2F - CALCULATOR (F))	1.38/2	<div><div></div></div>	0.34/2
Q29 (Paper 2F - CALCULATOR (F))	1.63/2	<div><div></div></div>	0.78/2
Q21 (Paper 2F - CALCULATOR (F))	2.81/3	<div><div></div></div>	1.54/3
Q26b (Paper 3F - CALCULATOR (F))	1.31/2	<div><div></div></div>	0.51/2
Q19a (Paper 1F - NON CALCULATOR (F))	1.75/2	<div><div></div></div>	1.04/2
Q19 (Paper 3F - CALCULATOR (F))	1.13/2	<div><div></div></div>	0.46/2
Q15 (Paper 2H - CALCULATOR (H))	2.32/3	<div><div></div></div>	1.35/3
Q14b (Paper 1F - NON CALCULATOR (F))	0.44/1	<div><div></div></div>	0.12/1
Q24a (Paper 3F - CALCULATOR (F))	2.75/3	<div><div></div></div>	1.86/3



Carrots ...



# ALCESTER ACADEMY

## GOLDEN TICKET

TO YOU, THE LUCKY STUDENT, WITH THIS GOLDEN TICKET FROM ALCESTER ACADEMY, PRESENT THIS TICKET TO EITHER MR HYDE, MRS MELLORS OR MISS BUCKTHORP UPON COMPLETION OF YOUR LAST EXAM TO INDICATE THAT YOU ARE FREE TO START THE NEXT STAGE OF YOUR LIFE.

CONGRATULATIONS AND GOOD LUCK!

## SUBJECT SIGN OFF

Maths	Stats/Further	English	Science	RE	Art	Drama
MFL	H&S	Food	History	Geog	ICT	PE

SIGNED AS COMPLETED: \_\_\_\_\_

# Worth knowing ... frequency analysis!

FREQUENCY ANALYSIS - JUNE 2017 to JUNE 2022 EDEXCEL (no sitting in June 20 or 21)									
General Number / FID/%	Topic	Foundation			Higher			Marks/	Appearan
		NUMBER OF APPEARANC	MARKS AVAILABL	Marks/ Appearan	NUMBER OF APPEARANC	MARKS AVAILABL	Marks/ Appearan		
	1 Place value	8	8	1.000					
	2 Number properties	2	2	1.000					
	3 Words into numbers	1	1	1.000					
	4 Numbers in size order	5	5	1.000					
	5 Decimals - size order	1	1	1.000					
	6 Negatives	3	4	1.333					
	7 Factors and multiples	12	16	1.333					
	8 Multiples in context	1	3	3.000	1	3	3.000		
	9 Highest common factor	3	5	1.667	3	5	1.667		
	10 Lowest Common Multiples	5	11	2.200	4	10	2.500		
	11 Prime numbers (inc product of)	4	8	2.000	2	4	2.000		
	12 Use of calculator	7	13	1.857	4	8	2.000		
	13 Addition	2	3	1.500					
	14 Multiplication	3	7	2.333					
	15 Subtraction	2	5	2.500					
	16 Division	1	3	3.000					
	17 Money problem solving	16	56	3.500					
	18 Order of (and four) operations	7	10	1.429					
	19 Reverse operations	1	2	2.000					
	20 Midpoints of two numbers	2	3	1.500					
	21 Powers & Roots	14	14	1.000	3	5	1.667		
	22 Standard form	15	23	1.533	15	27	1.800		
	23 Recurring decimals				5	12	2.400		
	24 Decimal - multiplication	1	1	1.000					
	25 Decimal - Division	1	3	3.000	1	3	3.000		
	26 Fraction addition	1	2	2.000					
	27 Fraction equivalence	4	7	1.750					
	28 Fraction of an amount	11	21	1.909					
	29 Equivalent fractions	2	2	1.000					
	30 Fractions	7	14	2.000					
	31 Fractions - addition	2	4	2.000	1	2	2.000		
	32 Fractions - division	2	3	1.500	1	2	2.000		
	33 Fractions - multiplication	3	10	3.333	3	9	3.000		
	34 Fractions - subtraction	4	9	2.250	1	3	3.000		
	35 Fractions / Ratio	2	5	2.500					
	36 FDP Conversions	20	23	1.150					
	37 FDP / Ratio	5	23	4.600	1	5	5.000		
	38 Percentage increase/ decrease	6	19	3.167	4	14	3.500		
	39 Percentage multipliers	1	2	2.000					
	40 Percentage of an amount	6	19	3.167	1	5	5.000		
	41 Percentage profit / Loss	5	18	3.600	2	7	3.500		
	42 Percentages	2	8	4.000	2	6	3.000		
	43 Percentages & ratio	2	7	3.500	4	10	2.500		
	44 Percentages / Area	1	3	3.000					
	45 Percentages to fractions	5	5	1.000					
	46 Reverse percentages	2	4	2.000	2	5	2.500		
	47 Simple interest	2	5	2.500					
	48 Compound interest	2	8	4.000	6	9	1.500		
	49 Growth and decay				3	7	2.333		
Combinations	50 Combinations / Listing outcomes	5	10	2.000					
	51 Combinations / Product rule				7	18	2.571		
Rounding / Estimation / Error Intervals / Bounds	52 Rounding	16	16	1.000	2	2	1.000		
	53 Estimation	4	12	3.000	3	8	2.667		
	54 Upper & Lower bounds				6	27	4.500		
	55 Error intervals	5	10	2.000	6	12	2.000		
Surds	56 Surds				7	17	2.429		
	57 Surds - Rationalising				2	7	3.500		



Foundation Tier (JUNE 2017 to JUNE 2022 (no sitting in June 20 or 21))					
8+ appearances		5, 6, or 7 appearances		Topics with ≥ 3 marks per appearance	
Simplifying expressions	21	Use of calculator	7	Plans and elevations	6.000
FDP Conversions	20	Order of (and four) operations	7	Ratio & percentages	5.000
Rounding	16	Fractions	7	Circles – circumference	5.000
Money problem solving	16	Expand single brackets	7	Surface area and volume	5.000
Standard form	15	Inequalities	7	Volume of a prism	5.000
Ratio	14	Quadratic graphs	7	Area in context	4.667
Powers & Roots	14	Time	7	FDP / Ratio	4.600
Solving linear equations	13	Reflections	7	Surface area	4.333
Scale Drawing / Using Scale	13	Bar charts	7	Frequency trees	4.200
Proportional Reasoning	13	Percentage increase/ decrease	6	Percentages	4.000
Sequences	12	Percentage of an amount	6	Compound interest	4.000
Factors and multiples	12	Coordinates	6	Ratio & trigonometry	4.000
Angle facts	12	Forming and solving equations	6	Coordinate geometry	4.000
Probability	11	Function machines	6	Area / Percentages	4.000
Fraction of an amount	11	Solving equations	6	Probability and ratio	4.000
Substitution	10	Pie charts	6	Venn diagrams	4.000
Speed / Distance / Time	10	Venn diagrams	6	Forming and solving equations	3.833
Index laws	10	Numbers in size order	5	Scale Drawing / Using Scale	3.692
Straight line graphs	8	Lowest Common Multiples	5	Arcs and sectors	3.667
Proportion – recipes	8	FDP / Ratio	5	Percentage profit /Loss	3.600
Place value	8	Percentage profit /Loss	5	Exchange rates	3.600
Pictograms	8	Percentages to fractions	5	Angles in polygons	3.600
Metric conversions	8	Combinations / Listing outcomes	5	Stem & leaf diagrams	3.600
Factorising expressions	8	Error intervals	5	Quadratic graphs	3.571
Highlighted topics are also ≥ 3 marks per appearance on average		Exchange rates	5	Money problem solving	3.500
		Conversion graphs	5	Percentages & ratio	3.500
		Rearranging equations	5	Best value	3.500
		Simultaneous equations	5	Area	3.500
		Metric measures	5	Angles in a triangle	3.500
		Circle definitions	5	Probability tree diagrams	3.500
		Angles in polygons	5	Fractions – multiplication	3.333
		Two way tables	5	Area of a triangle	3.333
		Estimate of the mean/ Mean from a table	5	Pythagoras theorem	3.333
		Stem & leaf diagrams	5	Proportional Reasoning	3.308
		Frequency trees	5	Speed / Distance / Time	3.300
		Relative frequency	5	Volume	3.250
		Probability Scale	5	Probability from a table	3.250
				Two way tables	3.200
				Percentage increase/ decrease	3.167
				Percentage of an amount	3.167
				Proportion – recipes	3.125
				Division	3.000
				Decimal – Division	3.000
				Percentages / Area	3.000
				Estimation	3.000
				Ratio in context	3.000
				Gradient between two points	3.000
				Real life graphs	3.000
				Quadratic, cubic & reciprocal graphs	3.000
				Geometric reasoning	3.000
				Angle facts – Parallel lines	3.000
				Reflections & Translations	3.000
				Pressure / Force / Area	3.000
				Density / Mass / Volume	3.000
				Pie charts	3.000
				Sampling & Capture/recapture	3.000
				Multiples in context	3.000

HigherTier (JUNE 2017 to JUNE 2022 (no sitting in June 20 or 21))

8+ appearances		5, 6, or 7 appearances		Topics with $\geq 3.5$ marks per appearance	
Standard form	15	Combinations / Product rule	7	FDP / Ratio	5.000
Fractional/Negative indices/Power of 10	15	Surds	7	Percentage of an amount	5.000
Ratio	12	Graphs of functions	7	Bearings	5.000
Index laws	11	Simultaneous equations	7	Scale Drawing / Using Scale	5.000
Direct / Inverse proportion	10	Iteration	7	Area in context	5.000
Algebraic fractions	10	Similarity	7	Area of a triangle	5.000
Speed / Distance / Time	10	Cones and spheres	7	Surface area and volume	5.000
Coordinate geometry	9	Circle theorems	7	Venn diagrams	4.667
Functions	9	Box Plots	7	Upper & Lower bounds	4.500
Cumulative frequency	9	Histograms	7	Arcs and sectors	4.500
Vectors	9	Probability	7	Angle facts	4.500
Quadratic graphs	8	Compound interest	6	Conditional probability	4.375
Conditional probability	8	Upper & Lower bounds	6	Cones and spheres	4.286
		Error intervals	6	Volume	4.250
		Proportional Reasoning	6	3d Trigonometry	4.250
		Expanding triple brackets	6	Ratio & trigonometry	4.000
		Rearranging equations	6	Ratio and fractions	4.000
		Arcs and sectors	6	Ratio in context	4.000
		Pythagoras theorem	6	Ratio/Area of a triangle	4.000
		Venn diagrams	6	Exchange rates	4.000
		Simplifying expressions	5	Coordinate geometry	4.000
		Factorising expressions	5	Forming expressions	4.000
		Forming and solving equations	5	Quadratics / Ratio	4.000
		Quadratic inequalities	5	Sequences/Simultaneous equations	4.000
		Gradient of a curve	5	Area	4.000
		Area under a curve	5	Circle theorems	4.000
		Transforming functions	5	Surface area	4.000
		Equation of a circle / Sim equations	5	Angles in a triangle	4.000
		Trigonometry	5	Angles in polygons	4.000
		Density / Mass / Volume	5	Two way tables	4.000
		Probability tree diagrams	5	Histograms & Pie charts	4.000
		Recurring decimals	5	Vectors	4.000
				Quadratic graphs	3.875
				Forming and solving equations	3.800
				Probability tree diagrams	3.800
				Cumulative frequency	3.778
				Ratio	3.750
				Sine/Cosine Rule	3.750
				Proportional Reasoning	3.667
				Geometric proof	3.667
				Equation of a circle / Sim equations	3.600
				Algebraic fractions	3.600
				Simultaneous equations	3.571
				Similarity	3.571
				Histograms	3.571
				Percentage increase/decrease	3.500
				Percentage profit / Loss	3.500
				Surds - Rationalising	3.500
				Coordinates	3.500
				$Y = mx + c$	3.500
				Inequalities	3.500
				Solving Quadratic equations	3.500
				Inverse functions	3.500
				Further trigonometry	3.500
				Cumulative frequency	3.500
				Sampling	3.500

Highlighted topics are also  $\geq 3.5$  marks per appearance on average

# Know the papers inside out (share with students!)

Answer ALL questions.  
Write your answers in the spaces provided.  
You must write down all the stages in your working.

1 Write 478 to the nearest hundred.

.....

(Total for Question 1 is 1 mark)

2 Write down a multiple of 8 that is between 41 and 60

.....

(Total for Question 2 is 1 mark)

3 Change 1.5 kilometres to metres.

..... metres

(Total for Question 3 is 1 mark)

4 Here is a list of numbers.

4      6      9      10      15      27      30      40

From the list, write down all the numbers that are powers of 3

.....

(Total for Question 4 is 1 mark)

5 Write 19% as a fraction.

.....

(Total for Question 5 is 1 mark)

Answer ALL questions.  
Write your answers in the spaces provided.  
You must write down all the stages in your working.

1 There are only blue cubes, red cubes and yellow cubes in a box.  
The table shows the probability of taking at random a blue cube from the box.

Colour	blue	red	yellow
Probability	0.2		

The number of red cubes in the box is the same as the number of yellow cubes in the box.

(a) Complete the table.

.....

(2)

There are 12 blue cubes in the box.

(b) Work out the total number of cubes in the box.

.....

(2)

(Total for Question 1 is 4 marks)

# Multiple choice?

Here are three symbols.

$<$	$>$	$=$
-----	-----	-----

Write one of these symbols in each box to make four true statements.

$$14 \quad \square \quad 21$$

$$4 + 7 \quad \square \quad 103 - 92$$

$$2^2 \quad \square \quad 2 \times 2$$

$$-3 \quad \square \quad -5$$

(Total for Question 10 is 2 marks)

# Working space

10 Bill has 400 counters in a bag.

He gives

35 of the counters to Sameena

50 of the counters to Henry

75 of the counters to Lucas

What fraction of the 400 counters is left in Bill's bag?

Give your fraction in its simplest form.

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(Total for Question 10 is 3 marks)

# Know the mark schemes too!

(Total for Question 11 is 2 marks)

11 At the end of October, Fiona's electricity meter reads 88 738 kWh.  
At the end of November, her electricity meter reads 89 198 kWh.  
Each kWh of electricity Fiona uses costs 16p.  
Work out how much Fiona had to pay for the electricity she used in November.

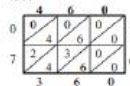
Handwritten work shows calculations for the difference in electricity usage (89 198 - 88 738 = 460 kWh) and the cost (460 × 16 = 7360p or £73.60). The candidate has circled "460 difference" and "460".

(Total for Question 11 is 4 marks)

Question 11 was awarded 0 marks.

The markscheme shows: M1 for 89198 – 88738 (=460) and the candidate has clearly shown this and circled it so this question should have been awarded 1 and not 0.

1MA1/1F marks awarded = 60 should be 61.

Paper: 1MA1/1F												
Question	Answer	Mark	Additional guidance									
11	£73.60 or 7360p	<div>M1</div> <div>for 89198 – 88738 (= 460)</div> <div>OR for showing <math>89198 \times 16</math> or <math>88738 \times 16</math></div> <div>OR for showing <math>(89198 + 88738) \times 16</math></div> <div>M1</div> <div>for showing "460" <math>\times 16</math></div> <div>OR for showing <math>89198 \times 16 - 88738 \times 16</math></div> <div>M1</div> <div>(dep on M1) for a complete method of multiplication with relative place value correct including an intention to add all the appropriate elements of the calculation</div> <div>eg, 2 lines of the 1st method, internal numbers of grids, or complete structure shown of partitioning methods.</div>	<div>May see 0.16 used</div> <div><math>89198 \times 16 = 1427168</math></div> <div><math>88738 \times 16 = 1419808</math></div> <div><math>(89198 + 88738) \times 16 = 2846976</math></div> <div>Accept in any units, correct figures would imply previous mark</div> <div>4600</div> <div>2760</div> <div>7360</div> <div></div> <div><table><tr><td></td><td>400</td><td>60</td></tr><tr><td>10</td><td>4000</td><td>600</td></tr><tr><td>6</td><td>2400</td><td>360</td></tr></table></div> <div>4000+2400+600+360</div>		400	60	10	4000	600	6	2400	360
	400	60										
10	4000	600										
6	2400	360										
		A1	for £73.6(0) or 7360p									
		SC B3	for an answer with digits 736 with incorrect or missing units									

(b) Work out the greatest integer that satisfies the inequality

$5y - 7 < 16$

$$\begin{array}{rcl} 5y - 7 & = & 16 \\ +7 & & +7 \\ \hline 5y & = & 23 \\ \div 5 & & \div 5 \\ \hline y & = & 4.6 \end{array}$$

Incorrect first step.

Just writing + 7 is not enough.  
It must be correctly evaluated too.

so M0A0

Answer	Mark	Mark scheme	Additional guidance
4	M1	for a correct first step, eg for adding 7 to both sides $5y - 7 + 7 < 16 + 7$ or for dividing throughout by 5 eg $\frac{5y - 7}{5} < \frac{16}{5}$ or for showing 4.6 (oe) as the critical value or for $5 \times 4 - 7$ with 13 seen as answer	Allow use of any inequality or as an equation for the first mark  Award 1 mark for 4.6 oe, eg $y = \frac{23}{5}$ or $y < 4.6$
	A1	for 4 or $y = 4$ with no incorrect working	An answer of 4 from incorrect working can score 1 mark at most.

# Alternate Timetable

WEEK 1 (week 1 on TT)								
Day		Lesson 1	Lesson 2	Break	Lesson 3	Lesson 4	Lunch	Lesson 5
Monday 15th May	Exam	Religious Studies Christianity (16) - 1 hr 45 mins			-	-		-
	Students to attend:	(1) EXAM (2) NORMAL LESSONS: N BAND: ENGLISH B BAND: SCIENCE	NORMAL LESSONS: N BAND: ENGLISH B BAND: MATHS		NORMAL LESSONS: N BAND: MATHS B BAND: ENGLISH	ALL STUDENTS SCIENCE		ALL STUDENTS SCIENCE
Tuesday 16th May	Exam	Biology P1 (ALL) 1 hr 45 mins / 1 hr 15 mins			-	-		Media Studies P1 (21) 1 hr 30 mins
	Students to attend:	EXAM	RETURN TO NORMAL LESSONS: N BAND: SCIENCE B BAND: ENGLISH		NORMAL LESSONS: N BAND: MATHS B BAND: ENGLISH	(1) MEDIA STUDIES (2) NORMAL LESSONS		(1) EXAM (2) NORMAL LESSONS: N BAND: ENGLISH B BAND: SCIENCE
Wednesday 17th May	Exam	English Lit P1 (ALL) 1hr 45 mins			-	-		GCSE PE (46) 1hr 30 mins
	Students to attend:	EXAM	EXAM		(1) GCSE PE (2) HISTORY (HALL / 1.24) (3) NORMAL LESSONS: N BAND: SCIENCE, B BAND: ENGLISH	(1) GCSE PE (2) HISTORY (HALL / 1.24) (3) NORMAL LESSONS: N BAND: ENGLISH, B BAND: SCIENCE		(1) EXAM (2) NORMAL LESSONS
Thursday 18th May	Exam	History P1 (121) 2 hrs			-	-		Business Studies P1 (54) 1 hr 45 mins
	Students to attend:	(1) EXAM (2) NORMAL LESSONS	(1) EXAM (2) NORMAL LESSONS		(1) BUSINESS STUDIES (2) NORMAL LESSONS: N BAND: SCIENCE B BAND: ENGLISH	(1) BUSINESS STUDIES (2) NORMAL LESSONS: N Band: Maths B Band: English		(1) EXAM (2) NORMAL LESSONS: N BAND: SCIENCE B BAND: ENGLISH
Friday 19th May	Exam	Maths P1 (ALL) 1 hr 30 mins			-	-		Psychology P1 (80) 1hr 45 mins
								Computer Science (47) 1hr 30 mins
	Students to attend:	EXAM	RETURN TO NORMAL LESSONS: N BAND: ENGLISH B BAND: MATHS		(1) PSYCHOLOGY (HALL) / COMPUTER SCI (2) NORMAL LESSONS	(1) PSYCHOLOGY (HALL) / COMPUTER SCI (2) NORMAL LESSONS		ALL STUDENTS SCIENCE



# Spice things up ...

## ONE-WEEK HOLIDAY CHALLENGE (F)

HOW MANY CAN YOU DO? ... HOW MANY WILL YOU DO?

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
<b>CALCULATE</b> $80 + 1000$	A square has a perimeter of 36cm, what is its area?	$\frac{2}{5}$ of a number is 8. What is the number?	Calculate: $\frac{1}{2} + 0.35$	What is 25% of 16?	Round 1787 to the nearest a) ten b) hundred c) thousand	What number is halfway between -19 and -1?
Calculate $6^2$	What is ? $1 \times 5$	How many years is 84 months?	<b>WHAT IS:</b> $806 + 2597$ ?	What factors are shared by the numbers 18 and 20?	How <b>MANY</b> 20 pence pieces are there in £7.40?	Put these numbers into <b>SIZE ORDER</b> . Start with the smallest 4.07 4.7 4.711 4.17 4.71
			What is $1.28 \text{ kg} + 542 \text{ g}$ ?	<b>WHAT IS</b> $360 \div 17$ ?	Calculate: $\frac{3}{4} + \frac{3}{4}$	Work out $0.15 \div 10$
			What is ? $\frac{5}{7} \times \frac{4}{5}$	What is $\frac{3}{4}$ written as a <b>DECIMAL</b> ?	A film finishes at 20:38 and was 94 minutes long. What time did the film <b>start</b> ?	Calculate: $\frac{15}{50} + \frac{3}{50}$
			Work out: $80 \times 40$	What is $56 \div 7$ ?	Calculate $502 - 89$	What is ? $663 - 87$
			If a number is five times greater than one hundred and eleven?	What is : $27.04 + 6.77$	What is $11 \times 32$ ?	<b>60 x 6 IS THE SAME AS 10 x .....</b>

These two rectangles are identical. The length of each rectangle is three times its width.

What are the coordinates of P?

Not to scale

Factorise  
 $5x^2y + 10x$

Simplify  
 $x^2 \div x^5$

What is 0.37 as a percentage?

Here is a two-stage number machine. Input: 6.7. Complete the table. What is the error interval?

**START →**

5 tins of soup have a total weight of 2000 grams. 4 tins of soup and 3 packets of soup have a total weight of 1705 grams. Work out the total weight of 3 tins of soup and 2 packets of soup.

Tom buys boxes of coloured pens. There are 9 red pens in each box of red pens. There are 12 blue pens in each box of blue pens. There are 4 green pens in each box of green pens. Tom buys equal numbers of red, blue and green pens. How many boxes of each colour did Tom buy?

The area of the rectangle is 6 times the area of the triangle. Work out the width of the rectangle.

A PC costs £600. It depreciates at 10% per annum. How much is it worth at the end of 2 years?

Solve  $2x + 3 = 10$

Which is bigger?  
50% of £40 or 40% of £50

Calculate  $\frac{2}{7} + \frac{1}{3}$

Calculate  $\frac{3}{5} \times \frac{1}{8}$

A "thing" is reduced in a sale by 30%. The sale price is £140. What was the original price?

Share £96 in the ratio 2:4

Write 8.23456 correct to 3 decimal places.

Write 8.23456 rounded to 1 decimal place.

A number 3.7 is rounded to 1 decimal place. What is the error interval?

94 children went on a school trip. They went to London or to Manchester. 20 boys and 19 girls went to London. 16 boys went to Manchester. Draw a frequency tree to represent this information.

# Exam day mornings

## STARTING STRONG ...

If $a = 6$ what is $5a$ ?	Change 420 cm into metres	calculate: $97 - 29$	What is the smallest number in the list? 5 0 -2 7 -3	Work out: $\frac{5}{8}$ of 320
Change 0.42 metres into centimetres	Write 28349 to the nearest thousand	What is 50% of 21?	$a = 3$ and $b = -2$ what is $4a - 3b$ ?	Work out 15% of 500
work out: $4.5 + 5.37$	What is the smallest 3 digit number that can be made using the digits: 5 4 8 7	What is the third multiple of 9?	Work out 15% of 84	Write 56 as a product of its prime factors
Work out: $\frac{1}{6}$ of 66	Change 8.2 centimetres into millimetres	Work out $4.7 - 1.89$	What is the LCM of 15 and 12?	What is $4.2 \times 10^4$ ?

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## HINTS

When adding or subtracting make sure you line up the units column

1 metre = 100 cm

1000 g = 1 kg

1 litre = 1000 ml

Product means "multiplication"

Draw a number line when dealing with negative numbers

.. .. You CAN do this!!!

## ANSWERS

IF THE ANSWER ISN'T HERE  
CHECK YOUR WORKING OUT!!  
CROSS OFF THE ANSWERS AS  
YOU WORK THROUGH THE  
QUESTIONS

200	11
27	4.2
8.2	457
10.5	28000
68	
8.4	
-3	
42	
75	
42000	
2.81	
30	
60	
9.87	
6	
$2^3 \times 7$	



EDEXCEL FOUNDATION PAPER 1 2023

# After Paper 1 and 2

Topics that haven't yet made an appearance after Edexcel Summer 2019 paper 1 and paper 2

There is a massive health warning in putting this list together ... Just because a topic has appeared on a paper 1 OR paper 2 of the Edexcel 2019 it could appear in a different format on another paper. There may also be some topics that have been missed off the list (the curriculum is massive!) and the intention is to provide you with something to focus on (JustMathsOnline Clip numbers are shown in the brackets).

THE BASICS – FOUNDATION ONLY	
Rounding to decimal places/sig figs	Fractions to % or decimals
Multiples	Probability Scale
Properties of 2D shapes including names and parts of: i.e. vertices/edges/radius etc	
Area of a triangle/trapezium/rectangle	Coordinates
Combinations	

THE CROSSOVER - BOTH HIGHER AND FOUNDATION TIERS	
Drawing curves (33)	Enlargements (63) and Rotations (65,66)
Product of prime factors (4)	Best Buys (7)
Frequency trees (2)	Use of calculator (3)
Exchange rates (8)	Interest (11) and Depreciation (12)
Reverse percentages (13)	Rearranging equations (25) (Foundation Only)
Averages (26,27,28)	Frequency diagrams (29)
Scatter graphs (30)	$Y = mx + c$ (34, 35) (Foundation Only)
Compound measures (37)	Pythagoras (39, 40, 45)
Trigonometry - angles (42,43,45)	Bearings (44)
Pie Charts (49)	Probability Trees (51, 52) (Foundation Only)
Venn diagrams (53)	Circles, arcs, sectors (56,57,58)
Surface area (59)	Similarity & Congruence (61/62)
Real-life graphs (31,32)	Estimation (70)
Direct/Inverse Proportion	Fractions – add and divide (14, 15)
Factorising quadratics (24)	Interior/Exterior angles of polygons (47)
Simultaneous equations (73/74)	

In addition to the above ... HIGHER TIER ONLY	
Recurring decimals	Bounds
Forming and solving equations	Expanding triple brackets
Factorising	Quadratic sequences
Quadratic Formula	Inequalities and regions
Reciprocal graphs/ Circle graphs	Functions (substitution into)
Iteration	Angles in polygons / parallel lines
Quadratic inequalities	Sine/Cosine for lengths and angles

**BUMPER "BETWEEN PAPERS" PRACTICE**  
SUITABLE FOR BOTH FOUNDATION & HIGHER TIERS

**SUMMER 2019 QUESTIONS**

NOT A "BEST" GUESS PAPER.

IS IT A "PREDICTION" ... ONLY THE EXAMINERS KNOW WHAT IS GOING TO COME UP! FACT! NEED TO REMEMBER THAT JUST BECAUSE A TOPIC CAME UP ON PAPER 1 IT MAY STILL COME UP ON PAPERS 2 OR 3 ...

HOW IMPORTANT IT IS TO PRACTICE. PRACTICE. PRACTICE ... SO WE'VE COLLATED A LOAD OF QUESTIONS THAT WEREN'T EXAMINED IN THE PEARSON/EDXCEL 9-1 GCSE MATHS PAPER 1 BUT WE CANNOT GUARANTEE HOW A TOPIC WILL BE EXAMINED IN THE NEXT PAPERS ...

ENJOY!  
MEL & SEAGER

Compiled by JustMaths – this is not a prediction paper and should not be used as such!

**BUMPER "BETWEEN PAPERS 2 & 3" PRACTICE**  
FOUNDATION

**SUMMER 2023 QUESTIONS**

A "BEST" GUESS PAPER.

THE EXAMINERS KNOW WHAT IS GOING TO COME UP! FACT! BECAUSE A TOPIC CAME UP ON PAPER 1 OR 2 IT MAY STILL COME UP ON PAPER 3 ...

PRACTICE, PRACTICE ... SO WE'VE COLLATED A LOAD OF PEARSON/EDXCEL 9-1 GCSE MATHS PAPER 1 BUT WE HAVE EXAMINED IN THE NEXT PAPERS ...

Again – strong parental communication

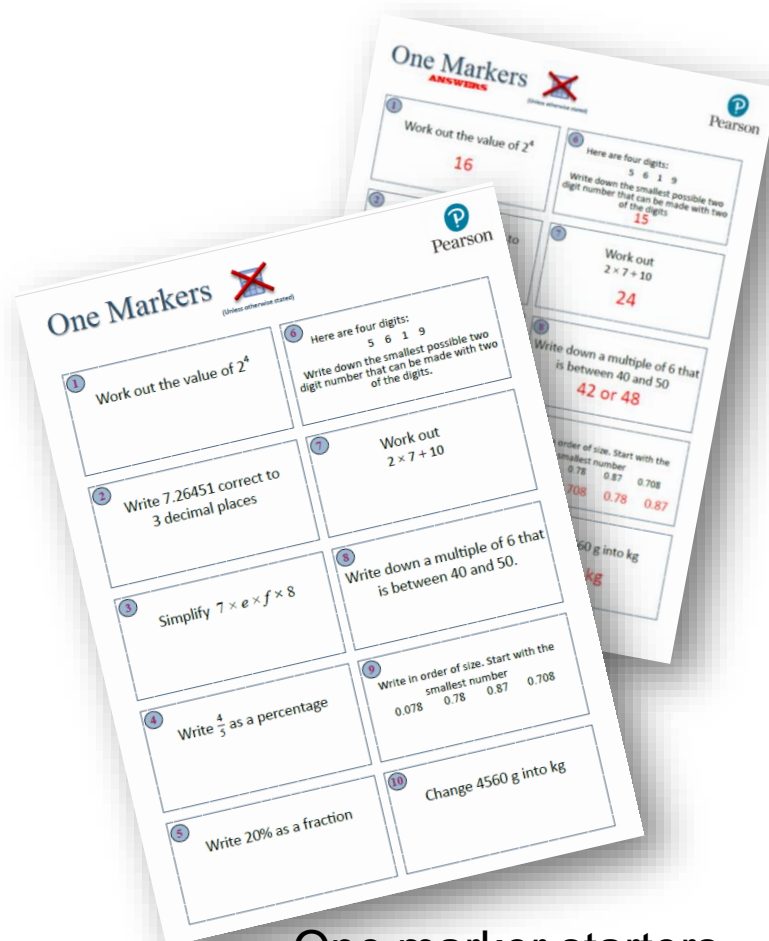
# Amazing *Emporium*

The [Maths Emporium](#) contains a rich source of resources for GCSE Mathematics teachers, including:

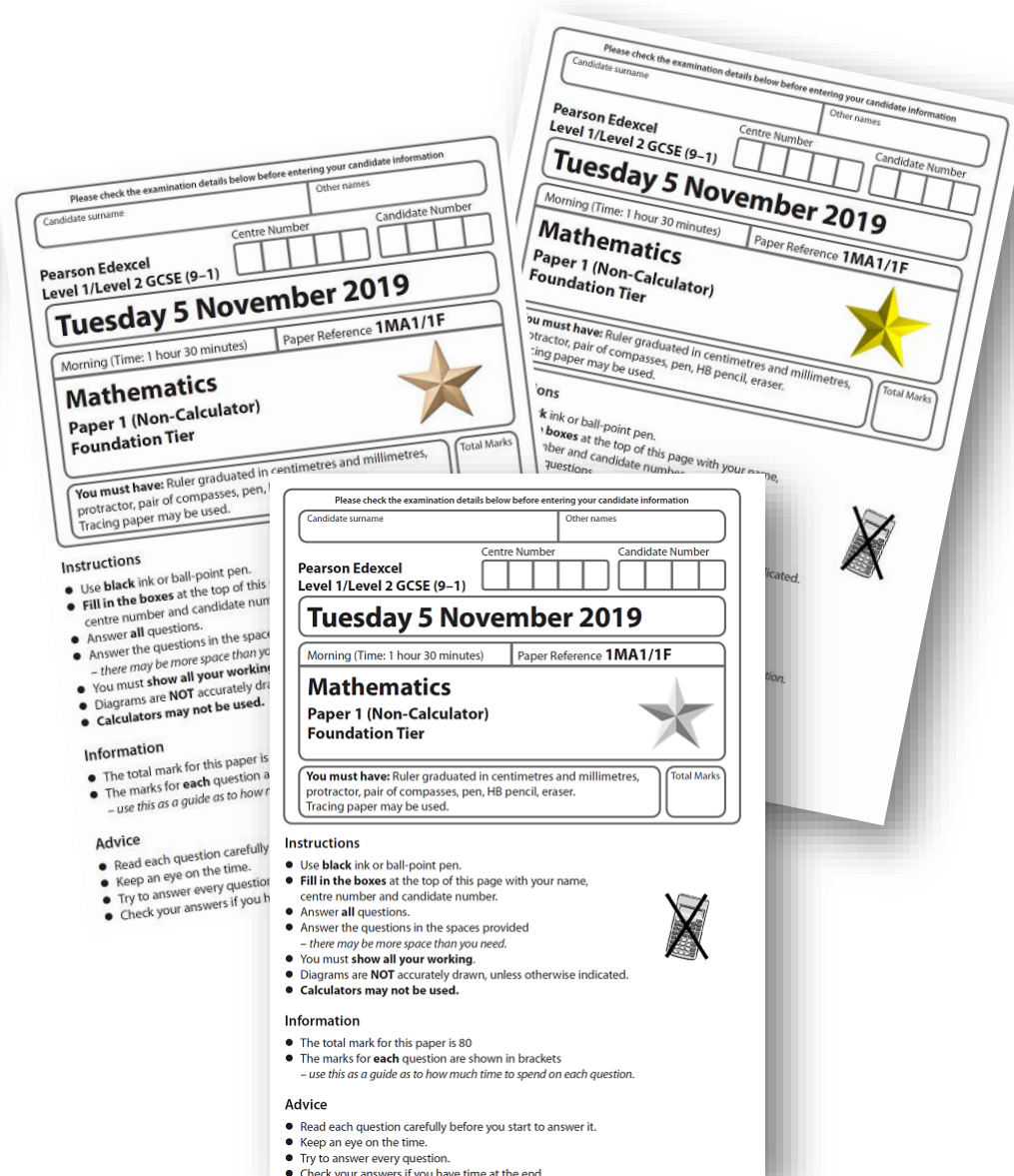
- shadow papers,
- [Foundation Tier Themed papers](#) and [Higher Tier themed papers](#) with worked solutions,
- practice sets,
- AO3 Bronze, Silver, Gold practice papers
- common question papers,
- 7 mock papers
- past papers, mark schemes, examiner reports

# Amazing *Emporium*

Bronze Silver Gold Papers



One marker starters





# Amazing *Emporium*

Themed Papers

Shadow Papers

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)**

Time 1 hour 30 minutes

**Mathematics**

**PAPER 1 (Non-Calculator)**

**Foundation Tier**

Reordered paper in terms of challenge

Paper reference **1MA1/1F**

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, Formulae Sheet (enclosed). Tracing paper may be used.

**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.
- Try to answer every question.
- Check your answers if you have time at the end.

Write your name here

Surname: \_\_\_\_\_ Other names: \_\_\_\_\_

Centre Number: [ ][ ][ ][ ][ ][ ] Candidate Number: [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

**Pearson Edexcel Level 1/Level 2 GCSE (9-1)**

**Mathematics**

**Recipes**

Paper reference **1MA1**

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

**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.
- If your calculator does not have a  $\pi$  button, take the value as 3.142 unless the question instructs otherwise.

**Information**

- The total mark for this paper is 21. There are 6 questions.
- Questions have been arranged in an ascending order of difficulty.
- 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.

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)**

Time 1 hour 30 minutes

**Mathematics**

**PAPER 1 (Non-Calculator)**

**Foundation Tier**

ADAPTED WITH MINIMAL CONTEXT VERSION OF QUESTIONS: 7, 10, 11, 13, 16, 25, 29 (Context free in Red)

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, Formulae Sheet (enclosed). Tracing paper may be used.

**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.
- Try to answer every question.
- Check your answers if you have time at the end.
- Good luck with your examination.

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)**

Friday 19 May 2023

Morning (Time: 1 hour 30 minutes)

**Mathematics**

**PAPER 1 (Non-Calculator)**

**Foundation Tier**

**Shadow Set 1**

Paper reference **1MA1/1F**

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, Formulae Sheet (enclosed). Tracing paper may be used.

**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.

Reordered Papers

Context adapted Papers

# Amazing *Emporium*

## Aiming 4 Papers

Write your name here  
Surname  
Other names  
Centre Number  
Candidate Number

**Pearson Edexcel**  
Level 1/Level 2 GCSE (9-1)

**Mathematics**  
Paper 1 (Non-Calculator)  
Aiming for Grade 3  
Spring 2023 Practice Paper  
31 marks 30 minutes

Foundation Tier  
Paper Reference  
**1MA1**

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

**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 31. There are 12 questions.
- This paper assumes students have worked through the "Aiming for Grade 1 and Grade 2 papers" and as a result may have already seen a small number of these questions.
- All the questions are placed in ascending order of mean difficulty as found by students achieving Grade 3 in the Summer and November 2022 examinations.
- 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.

**1MA1 – Aiming for Grade 3 1F**

Qn	Skill tested	Mean score	Max score	Mean %
1	Approximation and estimation	1.20	2	60
2	Fractions, percentages in context	2.44	4	61
3a	Fraction addition	1.22	2	53
3b	Fraction multiplication	1.06	2	53
4	Speed, distance, time	1.06	2	51
5	Solve linear equations	1.02	2	49
6	Bar charts & ratio	0.98	2	48
7	Product of prime factors	0.96	2	46
8	Product of prime factors	1.38	2	74
9a	Probability from a table	1.48	3	45
9b	Ratio in real context	0.89	2	43
9c	Apply four operations	0.43	1	43
10	Transformations	0.83	1	45
11	Pressure	0.75	2	38
12	Multiplying decimals	16.15	31.00	52.10

**Edexcel averages: mean scores of students who achieved grade**

ALL	5	4	3	2	1	U
1.20	1.89	1.74	1.36	0.73	0.22	0.07
2.44	3.74	3.33	2.63	1.57	0.90	0.79
1.22	1.92	1.73	1.31	0.80	0.35	0.11
1.06	1.73	1.40	1.02	0.72	0.54	0.40
1.06	1.72	1.31	1.02	0.65	0.52	0.40
1.02	1.83	1.40	1.12	0.82	0.42	0.52
0.98	1.02	1.33	1.09	0.67	0.46	0.43
0.96	0.98	1.66	1.40	0.46	0.13	0.40
1.38	1.79	1.48	1.02	0.89	0.48	0.03
1.48	1.90	1.95	0.98	1.21	0.83	0.31
0.89	1.76	1.45	0.89	0.41	0.26	0.60
0.43	1.45	1.56	0.89	0.29	0.20	0.25
0.45	0.69	0.95	0.45	0.52	0.21	0.17
0.83	0.73	0.62	0.47	0.77	0.26	0.22
0.75	1.69	1.20	0.86	0.56	0.37	0.21
	1.49	0.99	0.77	10.59	6.15	4.72

**Suggested grade boundaries**

Grade	5	4	3	2	1
Mark	24	19	14	8	5

# Amazing *Emporium*

17. The diagram shows a tree and a man.



The man is of average height.  
The tree and the man are drawn to the same scale.

(a) Write down an estimate for the real height, in metres, of the man.

..... metres  
(1)

(b) Find an estimate for the real height, in metres, of the tree.

..... metres  
(2)

**(Total for Question 13 is 3 marks)**

About 1 out of 4 students gained full marks on this question in Summer 2017

Full marks scored up to this point would be enough to achieve a nominal Grade 4 on this paper

Re-Ordered Papers



# Some go-to's – the power of video!

## Videos :



Johnny Ball estimates the number of black cabs in London ...

YouTube · BBC  
3 Apr 2012

## Powers of Ten™ (1977) - YouTube



Powers of Ten takes us on an adventure in magnitudes. Starting at a picnic by the lakeside in Chicago, this famous film transports us to the ...

## Circumference is pi times diameter song - YouTube



A catchy **song** to help you remember the area and **circumference** of circles.

YouTube · Graham Walton · 8 Sept 2012

## Area of a Trapezium - Pop Goes The Weasel - YouTube



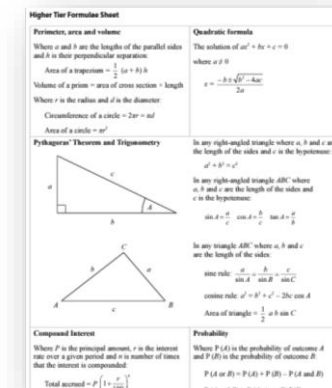
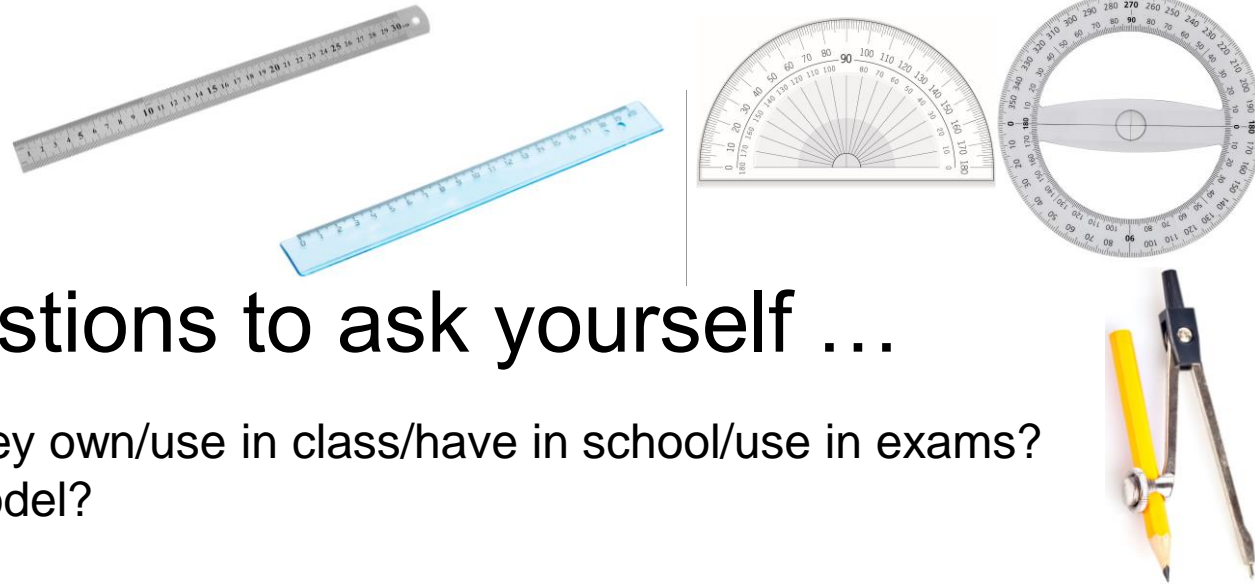
Visit the mkyou2tube website here: <http://mkyou2tube.weebly.com/index.html>  
The **Area of a Trapezium** sung to the tune of **Pop Goes The Weasel**.

YouTube · mkyou2tube · 3 Mar 2011

# Equipment

## Questions to ask yourself ...

- What calculator do they own/use in class/have in school/use in exams?  
Are they the same model?
- What type of protractor do they prefer/use in class/exams ... half or full circle?
- Do their rulers have cm and mm (are they transparent?) 30cm or 15cm?
- Can they use a pair of compasses (are they trained on how to use?)
- 2024 (??) Are they trained how to use the formula sheet/exam aid?



# Don't forget the basics!

The diagram shows a tree and a man.



The man is of average height.  
The tree and the man are drawn to the same scale.

(a) Write down an estimate for the real height, in metres, of the man.

**Foundation paper challenge!**

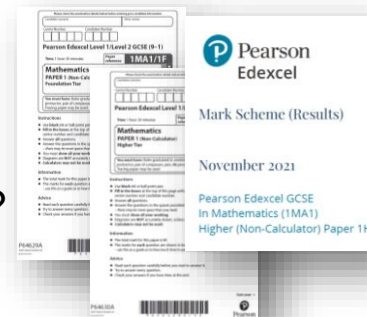
# Case Study Time Line

	YEAR 9	YEAR 10	YEAR 11
Half Term 1		Baseline assessment P1 (1 x non calc) Have groups as close to tiering 'ideal' as possible.  Analyse performance on Crossover Questions (Crossover Papers available on Emporium)  Share 'Re-Ordered Papers' in class if available	Baseline assessment P1 (1 x non calc) <b>(Final call for any students to start higher)</b>  Intervention/support starts and shared with parents: <ul style="list-style-type: none"> <li>- After school revision</li> <li>- Tutor time maths ('Aiming for papers')</li> <li>- Plan for half term sessions/Saturday schools</li> </ul>
OCTOBER HALF TERM			
Half Term 2		Internal Assessment P2 (following from Baseline)	Full mocks 1 (Use P1, P3 as P2 and P3(2) a 'Shadow Paper')
CHRISTMAS			
Half Term 3	Start to build in '1 Marker Starters' over year 9		<b>Final call for any student to join foundation</b> Ideally tiering sorted  'Final countdown' support shared with parents
FEBRUARY HALF TERM			
Half Term 4		Internal Assessment P3 (completing the suite of papers and 'rough' grades can be created)	Possible final tier changes (based on attendance etc.) Full mocks 2 (Use P1, P3 as P2 and P3(2) a 'Shadow Paper')  Rough final deadline for exam entries/ammendments
EASTER			
Half Term 5	Conclude KS3 Content		Final Paper 1
MAY HALF TERM			
Half Term 6	Expose to Full GCSE Paper in EoY assessments 1 x foundation non calc (Possibly HA students try higher)	Full set of 3 papers if possible on the 'ideal' tier for EoY assessments Use P1, P3 as P2 and P3(2) a 'Shadow Paper'  Groups ready for Sep (ideally final set changes now) Communicate to parents: Tiering for Sep, QLAs from EoY assessments, 'Practice Sets' and 'Themed Papers' for over summer	<b>Final Paper 2 and 3</b>  <b>All starts again!</b>
SUMMER			

**\*\*Script Viewer and ResultsPlus at the ready!\*\***  
[Resources on Pearson Emporium](#)

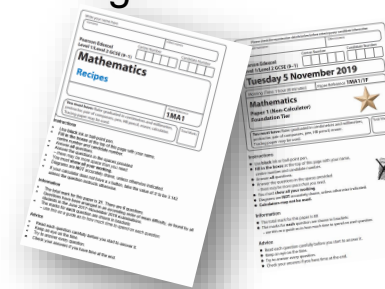
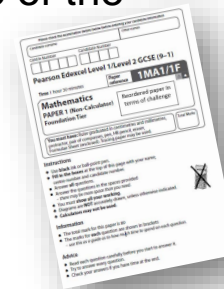
# Year 9 (ish)

- First and foremost – conclude the Key Stage 3 content
- Build in familiarisation (through the teaching) of the GCSE papers, language and layout.
- Ensure scientific calculators (ideally the same model) are being used by all students in class, in assessments and at home.
- January onwards, use the One Marker starters once/twice a week.
- Look at the end of year formal assessments (ideally in exam location and under strict exam conditions) being a foundation paper 1 for all students. Some schools may consider higher for their HA.
- Share the mark schemes with the students and expose to the process and the language of marking exam papers.
- Analysis ... how did the students perform?  
Look at the crossover questions.  
Are more ready to see higher early in year 10?
- Sets ready for year 10



# Year 10

- Baseline assessment of 1F or H early in year 10. A different series than what they sat at the end of year 9. Ideally more students sitting the higher this time after analysing the results at the end of year 9. The earlier the students experience the scale of the mountain, the better!
- As a follow up to this assessment, see if a re-ordered paper is available compare your students outcomes to these papers.
- Re-look at the sets. Any surprises (good and bad!).
- Over the course of half term 3 and 4, complete the GCSE suite with papers 2 and 3
- End of year assessments ideally being 3 full papers from a recent sitting. Paper 1 as paper 1. Paper 2 actually being the paper 3 from that sitting and then a shadow paper of the paper 2 for the students paper 3. This ensures a same sitting with the element of surprise and rough grades can be allocated.
- Reset ready for start of year 11
- Tutor groups ready for September too if possible.
- Revision packs for over summer (practice sets/themed papers/bronze silver gold papers)



# Summer Hols/First Week back

Get login details from  
your exams officer  
(you will need  
'scripter viewer'  
activated)

The left screenshot shows the login page at [edexcelonline.pearson.com/Account/Login.aspx](https://edexcelonline.pearson.com/Account/Login.aspx). It features the Pearson logo, 'EDEXCEL ONLINE' header, and a 'Log in' section with fields for Username (csg@northbromsgrove.worcs.sch.uk) and Password (\*\*\*\*\*). There are links for 'Forgot password?', 'Change password?', and a 'Log in' button. A service status section indicates 'Available' with a green checkmark. A yellow banner at the bottom says 'Will it work on my computer?'. A link for 'Need help logging in, or have log in details?' is also present.

The right screenshot shows the Home Page at [edexcelonline.pearson.com/main/HomePage.aspx](https://edexcelonline.pearson.com/main/HomePage.aspx). It features the Pearson logo, 'EDEXCEL ONLINE' header, and a navigation menu on the left. The main content area includes a 'Home Page' section with a 'WELCOME TO EDEXCEL ONLINE!' message. Below this is an 'Important message regarding Edexcel Online Accounts' section with links for 'Creating new and existing account' and 'Deleting accounts'. A section titled 'Use the drop-down menu on the left to access the different qualification areas.' lists several links: 'NEW! To access support articles, please click here', 'NEW! For Account Statements, Copy Invoices and Payments, discover our new iPay service by clicking here', 'Click here to visit our Additional Stationery Requests website', 'Please see our GDPR Policy', 'Changes to phone numbers If you need to call us please use the numbers listed below, or see how to contact us here', 'Viewing Invoices See how to view invoices here', 'Approvals Screens: In order for users to make Online Approval requests for both BTEC and NVQ qualifications, you will need the Online Approvals profile ticking on your account. Please see your Edexcel Online administrator if you need the Approvals profile.', and 'BTEC/NVQ Basedata: Authorised users can request basedata for approved BTEC and NVQ programmes via Edexcel Online by selecting the EDI Basedata option from the BTEC and NVQ menus. Instructions on how to do so can be viewed by clicking the help link at the top right of the basedata page.' A footer note states '\* Calls cost 1.6p per minute, with no additional charge from your phone company.'

<https://edexcelonline.pearson.com/Account/Login.aspx>  
(or google 'script viewer'!)



# Results Plus

<https://qualifications.pearson.com/en/support/Services/ResultsPlus.html>  
(Google 'Results Plus')

Pearson | Qualifications

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Support topics Services Key dates Resources

Home > Support > Services > ResultsPlus

## Services ResultsPlus

ResultsPlus is our online results analysis tool for teachers. Included as part of your qualification fees, ResultsPlus gives you a detailed breakdown of your students' performance in Pearson Edexcel exams and BTEC external assessments.

### Why should I use ResultsPlus?

- Provides detailed analysis of your learners performance.
- Identify potential topics, skills and types of question where students may need to develop their learning further.
- See actual scores for each exam question for a student, class or group.
- Understand how your students' performance compares with class and Pearson Edexcel national averages.
- Acquire data that may support effective learning and teaching approaches.

ResultsPlus Overview: an online results analysis tool

Results Plus

### ResultsPlus

- Register for ResultsPlus
- FAQs
- New post-16 functionality
- Functional Skills
- BTEC Nationals
- ResultsPlus for Mocks Service
- Group Analysis
- T Levels

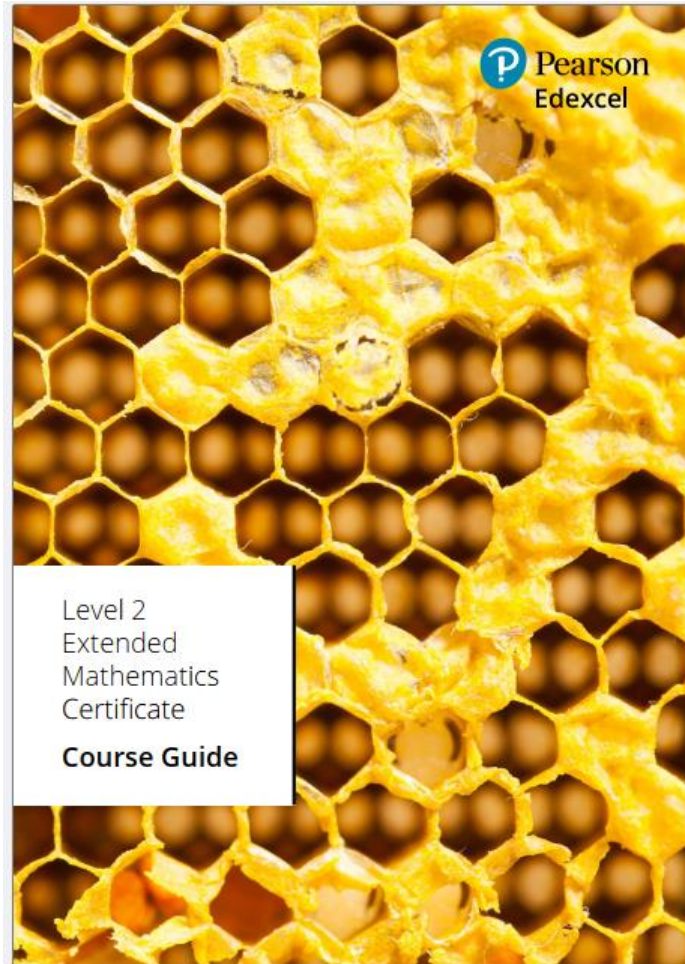
### Videos

Log in to ResultsPlus

### Related services



# Extended Mathematics Certificate



## Extended Mathematics Certificate Course Guide Release date – February 2024

If you would like to see our specification and SAMs relating to the brand-new Extended Mathematics Certificate, please visit our website.

[Extended Maths Certificate Webpage](#)

Level 2 Extended Maths certificate

## Level 2 Extended Maths certificate

### Specification



DOWNLOAD

PDF | 2.4 MB

**Teaching from:** September 2024

**External assessment from:** 2025

**Availability:** UK and international

Our Level 2 Extended Mathematics certificate provides stretch and challenge that allows learners to dive deeper into maths. The relevant foundational content helps them to achieve their potential at KS4, as well as bridging the transition to many KS5 subject areas.

### Register your interest

We'll keep you up to date with important news, support and information about this qualification.

[Register interest](#)

### Course materials

- [Specification and sample assessments \(2\)](#)
- [Teaching and learning materials \(2\)](#)



# Get Ready to Teach EMC

Please click on the links if you are interested in registering.

[Get Ready to Teach EMC 1](#) – Thursday 13th June

[Get Ready to Teach EMC 2](#) – Tuesday 25th June

For more courses see our [Pearson Professional Development Academy](#).



**Level 2 Extended Mathematics Certificate**

Free

Level 2 Extended Maths Certificate: Getting Ready to Teach 13.06.24

By Pearson

13 June 2024 at 16:00-17:30 BST This event is to introduce and familiarise those who wish to deliver Pearson Edexcel's new Level 2 Extended...

1.5hrs

13-Jun-2024

Online Scheduled

**Level 2 Extended Mathematics Certificate**

Free

Level 2 Extended Maths Certificate: Getting Ready to Teach 25.06.24

By Pearson

25 June 2024 at 16:00-17:30 BST This event is to introduce and familiarise those who wish to deliver Pearson Edexcel's new Level 2 Extended...

1.5hrs

25-Jun-2024

Online Scheduled



Contact or arrange a visit:

[christian@justmaths.co.uk](mailto:christian@justmaths.co.uk)

[mel@justmaths.co.uk](mailto:mel@justmaths.co.uk)



Pearson