



BROOKFIELD COMMUNITY SCHOOL
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Route to Exams Maths



Mathematics – Route to Exams 2025

Statisticians and economists at the DfE established a link between GCSE attainment and an increase in lifetime earnings after tracking the earnings of more than two million people in England over 12 years.

One-grade improvement in maths is estimated to be linked with an increase of £14,579 in present value of lifetime earnings

**The
Standard** 

ELEANOR BUSBY
9 JULY 2021



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Mathematics – making revision effective

- Every year, 10% of students miss out on a Higher grade by 3 marks or less.
- The 2024 boundary for a 4 on Foundation was 23 marks higher than 2023!



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Mathematics – making revision effective

- Using books/topic tests/mocks/past papers.
- Using Sparx.
- Free from distractions and bad advice!



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Mathematics – making revision effective

- Treat every practise paper like it is your real exam.
 - Black pen (either ink or ball-point – no erasable pens as they can fade with heat!)
 - Clear pencil case
 - Clear water bottle with no labels
 - Pencils (and an eraser and sharpener!)
 - Scientific calculator (make sure to remove the lid if you have one)
 - A ruler, pair of compasses, and protractor (or any mathematical instrument set)



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Mathematics – making revision effective

- Treat every practise paper like it is your real exam.



Equipment needed for GCSE maths exams

includes: ⇨ Think Student +1

- Black pen (ink or ball-point)
- Clear pencil case
- Clear water bottle
- Pencils (with eraser and sharpener)
- Scientific calculator
- Ruler, pair of compasses, and protractor



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Mathematics – going the extra mile

- Use your books and topic tests to support you.
- Every topic test is written from past paper questions, broken down by skill and scored as a percentage to help you compare and prioritise.



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Mathematics – going the extra mile

TOPIC TEST: Year 7 Higher 2. Number Skills

Calculators allowed on Q8 & 9 only

Score 18 / 24 75 %

Question	Skill	My Score / Out Of
Q1 – Q2	Understand factors, multiples, HCF and LCM	6 / 6
Q3	Calculate with negative numbers	4 / 4
Q4	Use mental and written strategies for multiplication	4 / 4
Q5	Use mental and written strategies for division	1 / 1
Q6	Carry out calculations involving squares, cubes, square roots and cube roots.	0 / 3
Q7	Estimate a calculation by rounding	0 / 3
Q8 – Q9	Use a scientific calculator accurately	3 / 3
Total		18 / 24



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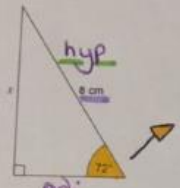


Mathematics – going the extra mile

Topic test - worked solution

Q3. This angle is measured to the nearest degree. Use trigonometry to work out the maximum possible value of length x , to 2 decimal places.

SOHCAHTOA



Not drawn accurately

$71.5 \leq x < 72.5$

$\sin \theta = \frac{o}{h}$
 $\sin 72 = \frac{x}{8}$
 $8 \sin 72 = x$
 $x = 7.63$

Answer 7.63 cm (Total 3 marks)

- 1- Start by labelling the triangle
- 2- Then find the bounds for the angle
- 3- Then use SOHCAHTOA to pick which calculation to use
- 4- Do the calculation in this case Sin
- 5- calculate answer and write answer

What mistake did you make?

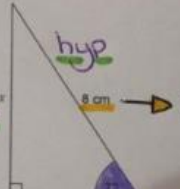
The mistake I made was not reading the question correctly and therefore not using bounds in my angle calculation.

e.g rounded to nearest ten
 5 down $\leftarrow 75 \leq x < 85 \rightarrow$ 5 up

Impact check

This hypotenuse is measured to the nearest centimetre. Use trigonometry to work out the maximum possible value of length x , to 2 decimal places.

SOHCAHTOA



Not drawn accurately

$7.5 \leq x < 8.5$

$\sin \theta = \frac{o}{h}$
 $\sin 72 = \frac{x}{8.5}$
 $8.5 \sin 72 = x$
 $x = 8.08$

Answer 8.08 cm



Mathematics – going the extra mile

- All AQA papers available online, walkthroughs on youtube.
- [AQA | Find past papers and mark schemes](#)
- We have used the papers from 2021 onwards – all the papers 17-20 are available for practise.

Subject

Mathematics

Qualification

GCSE

Specification

Mathematics (8300)

Series

All available series



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Mathematics – going the extra mile

- You can access grade boundaries from when these were live papers, but use with caution.
- We don't know where the boundaries will land this summer – we do know that more marks will equal a better grade.
- We know that there are a certain number of grades at each level available.
- Control the controllable!



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Mathematics Assessment Feedback

Paper November 2019 Paper 1F
Name Joe Bloggs
Teacher Mr Stewart

sparx

Questions	Topic	Score	Sparx Code
1	Understanding and ordering decimals	1 / 1	U435
2	Solving equations with one step	1 / 1	U755
3	Fractions, decimals and percentages	0 / 1	U594,U888
4	Calculating with roots and powers	1 / 1	U851
5	Using a written method to multiply integers	1 / 3	U127
6a	Interpreting bar charts	0 / 1	U557
6b	Interpreting bar charts	1 / 1	U557
6c	Interpreting bar charts	1 / 1	U557
6d	Drawing bar charts	2 / 2	U363
7a	Using a written method to divide with decimals	1 / 1	U868
7b	multiplying and dividing with place value, Using a written method to multiply decimals	1 / 1	U735,U293
8a	Adding and subtracting decimals	2 / 2	U478
8b	Adding and subtracting decimals	2 / 2	U478
9	Using a written method to multiply decimals	2 / 2	U293
10	Multiplying and dividing with place value, Understanding and ordering integers	0 / 3	U735,U600
11a	Writing probabilities as fractions	1 / 1	U408
11b	Writing probabilities as fractions	0 / 2	U408
12	Constructing fractions, Constructing and solving equations	2 / 3	U163,U599
13	Rounding integers, Rounding decimals, Estimating calculations	2 / 2	U480,U298,U225
14	Area and perimeter, Writing and simplifying ratios	3 / 3	U993,U687
15	Angles on a line and about a point	3 / 3	U390
16	Calculating with roots and powers	0 / 1	U851
17	Plotting straight line graphs	2 / 3	U741
18a	Constructing fractions	2 / 2	U163
18b	Finding percentages of amounts without a calculator	3 / 3	U554
19a	Writing and simplifying ratios	1 / 1	U687
19b	Writing and simplifying ratios	1 / 1	U687
20	Writing probabilities as fractions, Probabilities of mutually exclusive events	1 / 1	U408,U683
21	Solving equations with the variable on both sides	2 / 3	U870
22	Sharing amounts in a given ratio, Angles in triangles	2 / 4	U577,U628
23	Types of data	1 / 1	U322
24a	Reflection	1 / 1	U799
24b	Rotation	1 / 1	U696
25a	Position-to-term rules for geometric sequences	0 / 1	U958
25b	Special sequences	0 / 2	U680
26	Simplifying algebraic fractions by cancelling, Substitution into formulae	2 / 2	U103,U585
27	Index rules with positive indices	3 / 3	U235
28	Finding the volume of cylinders, Finding the volume of spheres	0 / 4	U915,U617
29	Sharing amounts in a given ratio	4 / 4	U577
30a	Multiplying and dividing numbers in standard form	2 / 2	U264
30b	Adding and subtracting numbers in standard form	0 / 2	U290
31	Interpreting inverse proportion equations	1 / 1	U364
Total		56 / 80	



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Mathematics – going the extra mile

- Getting the most from Sparx – use your q by qs to target skills you need to improve upon.
- Sparx can produce unlimited extra, personalised practise for you to help revise and prepare for exams.



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Mathematics – going the extra mile

- Work with the Maths department.
- Tuesdays after school.
- Easter School.
- Boosters and pre exam breakfasts.



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Mathematics – going the extra mile

- The Maths department believe in you, and we will do everything we can to support you.
- You have already improved by more than half a grade per student, from your mocks in December to this point in March.
- You have an incredible opportunity to do brilliantly this summer, as individuals and as a year group. Make sure you grab it with both hands!



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