

ST MALACHY'S COLLEGE MATHS NEWSLETTER



WELCOME!

Greetings and welcome back to our mathematics newsletter! Once again, we are excited to highlight the accomplishments of our students after their Christmas exams, all while giving mathematics the recognition it truly deserves. In this edition, we will continue to present engaging puzzles and share valuable tricks and tips to aid in mathematics study, highlight our very successful open night, in addition to looking at the upcoming intermediate maths challenge for year 11 and 12 pupils. The new school term is off to an excellent start, with our students settling in and refocusing on their studies after the Christmas break. Read on to get a recap of all the exciting events that took place during the month of January!

The image shows a chalkboard with several mathematical diagrams and formulas. On the left, there is a diagram of a rectangle with height 'A' and width 'B', and a right-angled triangle. Below it, the following derivation is written:

$$\begin{aligned}\sin 300^\circ &= \\ &= \sin(3 \cdot 90^\circ + 30^\circ) \\ &= \cos 30^\circ = -\frac{\sqrt{3}}{2}\end{aligned}$$

In the center, there is a diagram of a circle with a vertical radius 'r' and a horizontal radius 'r'. A point 'P' is marked on the circle in the second quadrant, forming a right-angled triangle with the radii. The angle between the vertical radius and the line segment to 'P' is labeled 'alpha'.

On the right, there is a formula for the perimeter of a sector:

$$P_N = \frac{\alpha}{360^\circ} \cdot \pi \cdot r$$

Below this, another formula is written:

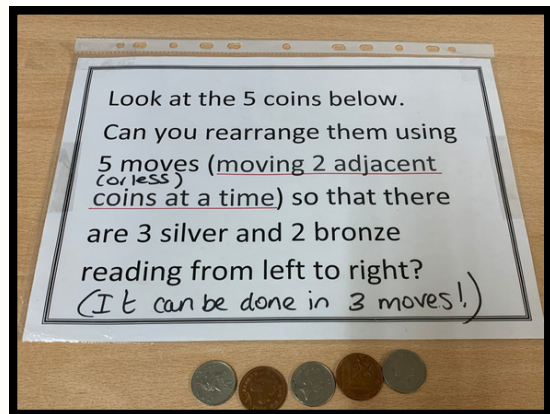
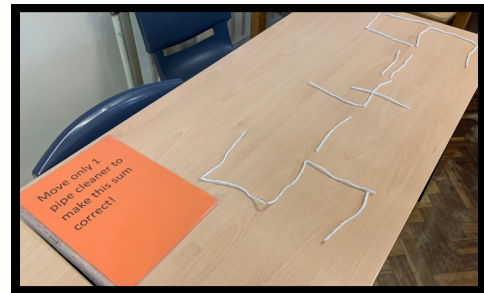
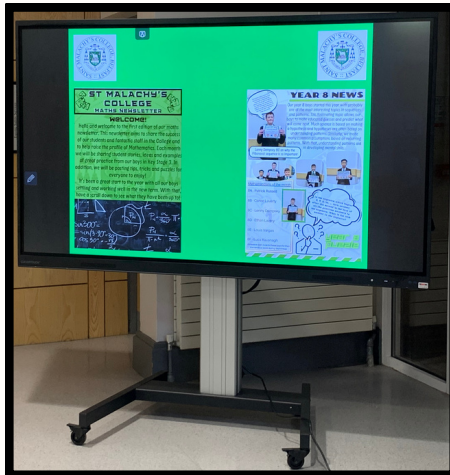
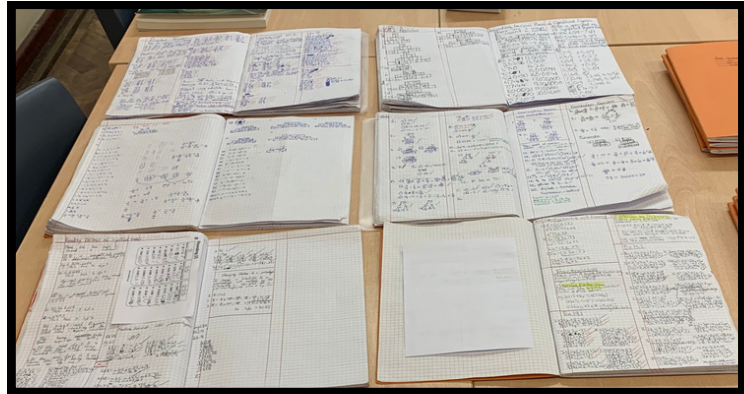
$$\frac{P_N}{\pi \cdot r^2} = \frac{\alpha}{360^\circ}$$

At the bottom right, there is a large handwritten symbol that looks like a stylized 'L' or '7' with a small 'alpha' next to it.

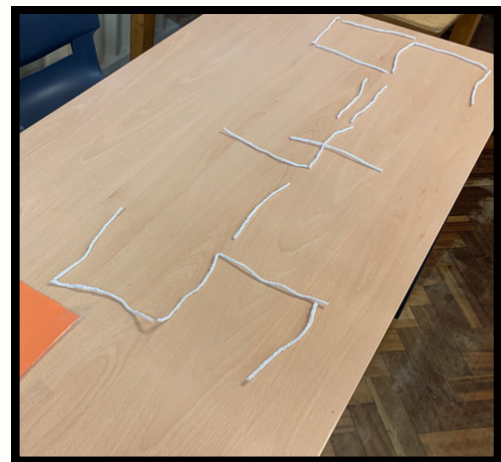
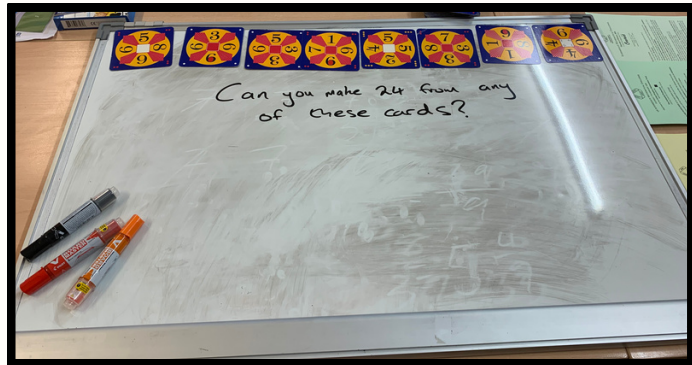
OPEN NIGHT HIGHLIGHTS

On Tuesday 16th, and Wednesday 17th January, our school held two very successful open nights for our future year 8 pupils. This night proved to be hugely successful, with both nights showcasing to P6 and P7 pupils everything St Malachy's had to offer.

The maths department put on a show! We had some great puzzles, a look at our mathematics curriculum, games on the clevertouch, as well as some mathemagic which left our future students bewildered! We look forward to seeing our future students next year and look forward to getting to know them better.



OPEN NIGHT HIGHLIGHTS



HELPING PUPILS WITH MATHS STUDYING

There is no single trick to mastering this subject. However, with the right strategies and mindset, anyone can become proficient in mathematics. Developing a strong foundation in mathematics not only supports academic success but also enhances critical thinking, problem-solving skills, and logical reasoning abilities. This great infographic is from head of department Chris McGrane in Glasgow and details great techniques to elevate your studying to the next level.

How To Study Mathematics

Identify The Issues

Notes

- Maths is a practical subject.
- **Never** just read your notes.
- You need to do questions!

Past Exam Questions

- Make a **list** of your mistakes
- Write out the correct solutions, don't just read them.
- If you don't understand a question, **ask for help!**
- Go back a few days later and do the questions on your mistake list again.

Be Strategic & Get Support

Be Strategic

- Sometimes do whole past papers, sometimes focus on one topic.
- e.g. : have a day where you focus on your least favourite topic

Homework

- Make sure it is done.
- Go back and fix your mistakes
- Don't ignore the ones you get wrong

Get Support

- Attend supported study
- Ask your teacher for help
- Youtube videos

Help Yourself Remember

Test Yourself

- Do past papers without your notes.
- See what you *really* know
- Redo your incorrect questions a few days later.
- See if you have improved.

Space Your Practice

- An hour of study done often throughout the year is much better than cramming at the end. You will remember more this way.

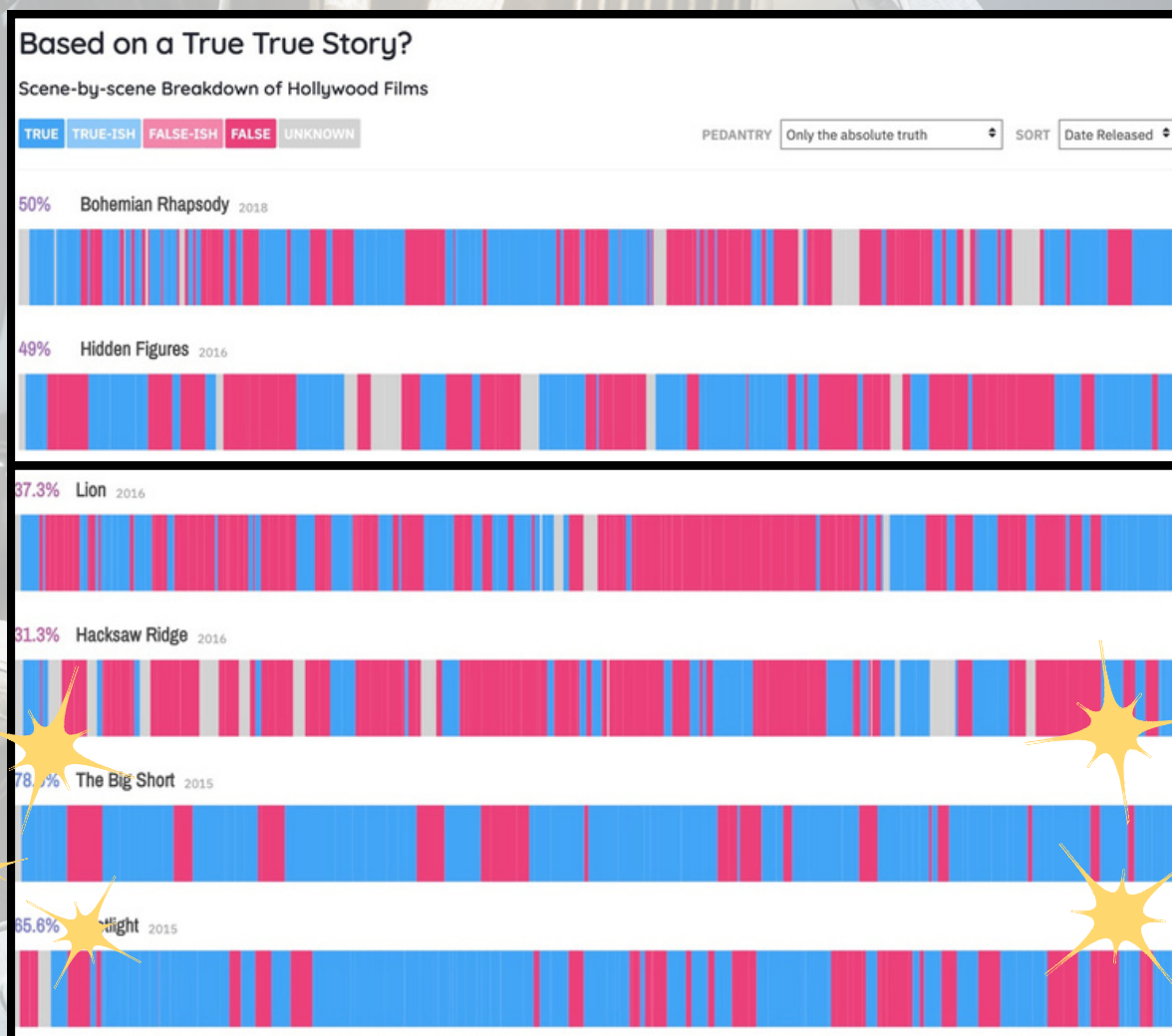
Here are some more great websites to help with your studying, don't forget Dr Frost maths offers videos with every question!

- <https://corbettmaths.com/contents/>
- <https://ccea.org.uk/key-stage-4/gcse/past-papers-mark-schemes>
- <https://ccea.org.uk/students-parents/choosing-qualifications/gcse-student-guides>

It's movie season

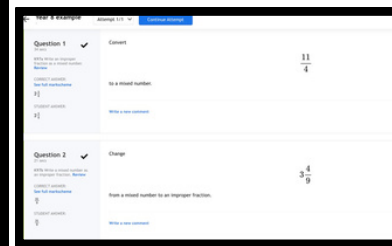
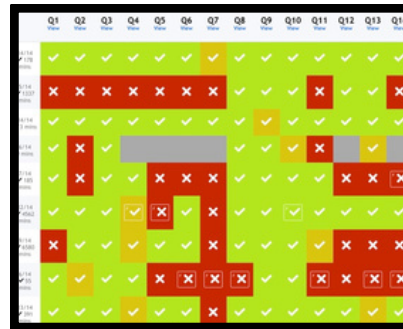
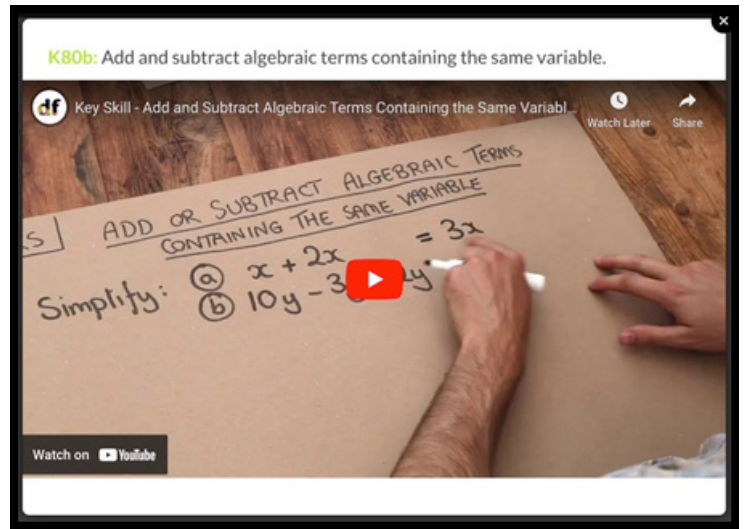
The new year heralds the beginning of an exciting awards season, complete with glamorous red carpet appearances, moving speeches, and a mix of comedic moments from hosts and presenters. The recently concluded Golden Globes marked the kickoff of this season, setting the stage for upcoming ceremonies like the BAFTAs and the Oscars. As we await these prestigious events, the anticipation is high for the stellar performances, memorable moments, and acknowledgments that will unfold in the world of film and television. With new historical movies coming out like *One Life*, and biographical films like *One Love* (which looks at the life of Bob Marley), a question must be asked at how accurate these films are to their real story. Well fear not, Information is Beautiful has produced a wonderful infographic that helps distinguish the absolute fact from out right lies!

Have a look at the full breakdown and more films here:-
<https://informationisbeautiful.net/visualizations/based-on-a-true-true-story/>



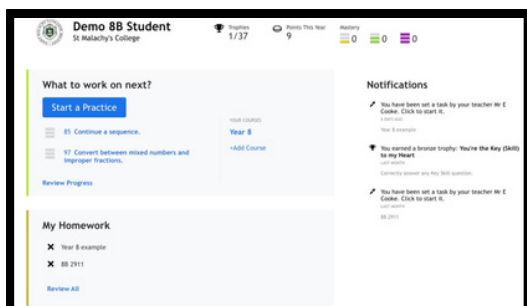
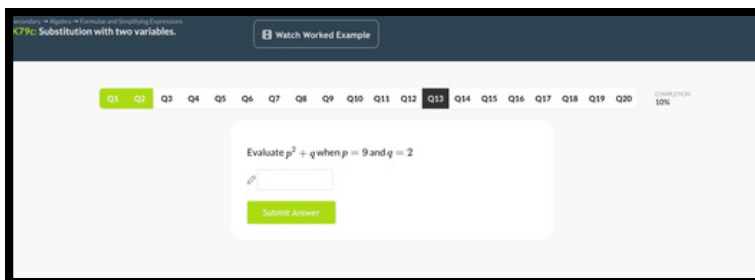
Update

St. Malachy's Maths Department has recently introduced a new software, Dr Frost Maths, aimed at enhancing learning and revision for both junior and senior classes. The software provides various features for teachers, including task monitoring, assignment allocation, worksheet generation, and identification of class misconceptions. Following training, the department has successfully implemented the software, particularly benefiting Year 11 and Junior classes for homework. The feedback from students has been overwhelmingly positive, with the software's question generators and exam-style questions allowing them to delve deeply into each topic. The availability of working-example videos for every topic has further contributed to a comprehensive understanding of the material. Some classes have already received their login credentials and guidance on using the software. It is reported that pupils are actively engaged, working hard on homework assignments, and utilising the videos to aid their studying. The department looks forward to expanding the use of this innovative tool in the new year, anticipating continued positive impacts on student progress.



Assigned tasks

Task	Created	Start	End	Completed	Marked
Year 8 Example	2019-01-10	2019-01-10	2019-01-10	100%	100%
Year 8 Example	2019-01-10	2019-01-10	2019-01-10	100%	100%
Year 8 Example	2019-01-10	2019-01-10	2019-01-10	100%	100%
Year 8 Example	2019-01-10	2019-01-10	2019-01-10	100%	100%
Year 8 Example	2019-01-10	2019-01-10	2019-01-10	100%	100%
Year 8 Example	2019-01-10	2019-01-10	2019-01-10	100%	100%



Dr Frost School Leaderboard

RANK	STUDENT	TOTAL MASTERY	TOTAL POINTS
1	SHARKEY, (8D)	1245	1186
2	MULLAN, (8A)	1204	1121
3	DASKO, (8A)	1145	1056
4	O'HARE, (8D)	1096	993
5	MAGEE, (8A)	1079	999
6	HOLMES, (8F)	1054	976
7	QUINN, (8D)	1038	897
8	O'NEILL, (8F)	1021	954
9	JAWAD, (8A)	1004	992
10	O'KANE, (8D)	1004	950



UK Maths Trust

Intermediate Mathematical Challenge

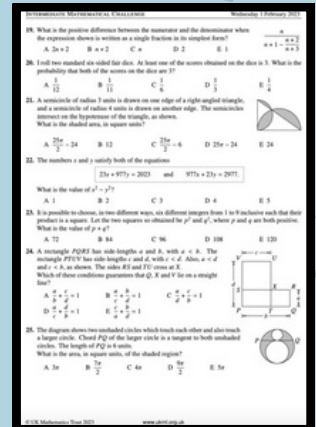
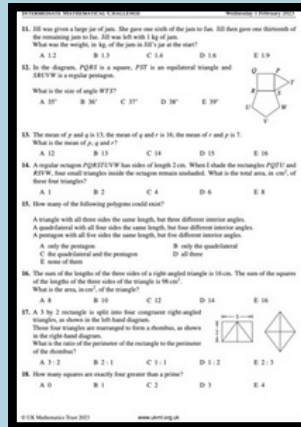
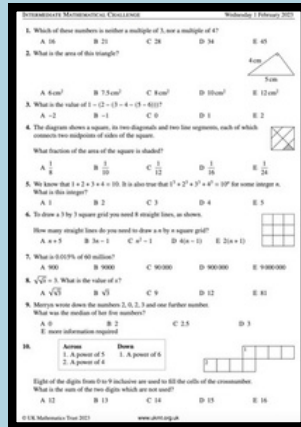
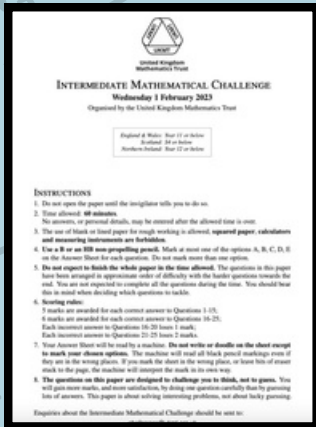
Year 11 and 12 boys at St. Malachy's are taking part in the second out of three UKMT challenge rounds. The challenge aims to engage top-performing students and foster a love for problem-solving. The Intermediate Maths Challenge consists of a 90-minute, 25-question paper designed to make students think, not guess. Awards will be distributed once received. If interested, please contact your maths teacher.

Preparing for the challenge

Past Papers

You can use UKMT past papers, solutions and investigations as preparation for maths challenges.

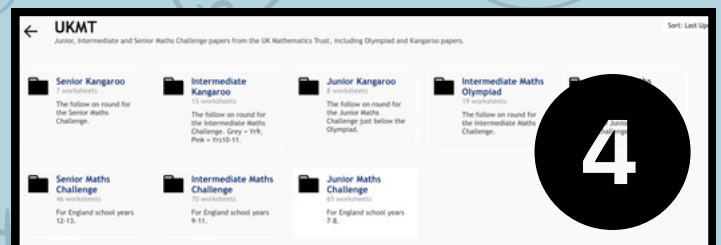
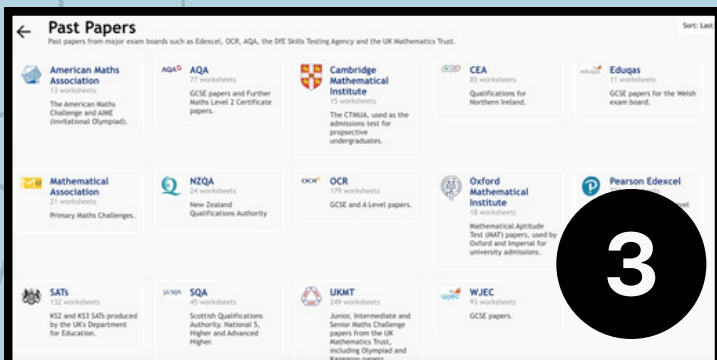
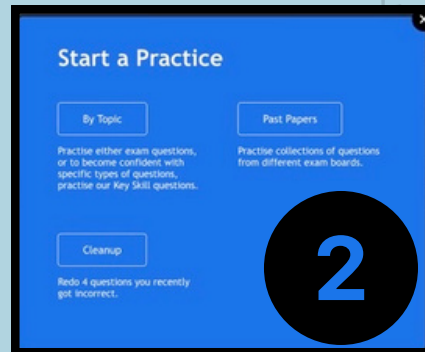
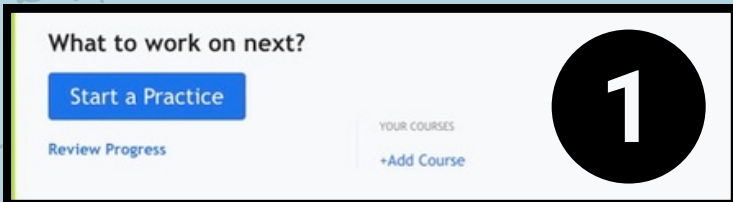
Past papers can be found here - <https://ukmt.org.uk/current-past-papers/jsf/jet-engine:free-past-papers/tax/challenge-type:70/>



Dr Frost Maths

The UKMT are delighted to team up with Dr Frost Maths to help pupils and teachers prepare for the challenge.

Here are the steps to access questions on Dr Frost Maths. Click Start a practice, Past Paper, UKMT, then Intermediate Maths Challenge



Puzzle of the Month

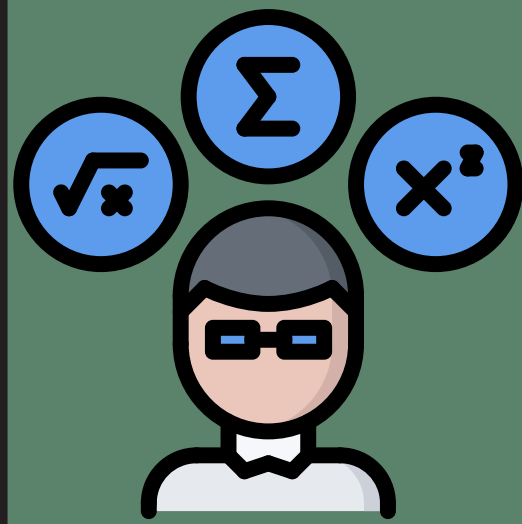
As mentioned, next week is the return of the Intermediate Maths challenge run by the UK Maths Trust. The UK Mathematics Trust was founded in 1996 with the charitable aim of advancing the education of young people in mathematics.

This is a tremendous opportunity for our brightest pupil to test their wits against others across the UK.

The first 15 scores 5 points, where the next 5 are 6 points, followed by the final 5 which are 7 points.

The challenge itself is difficult, however the enrichment activities aim to open young people's minds to the breadth and depth of mathematics.

This month's puzzle features a question from the 2021 challenge. Have a go and see if you can do it yourself.



MathsBox SKI-Run

By starting with the number in white. Find the final answer to the green, amber and red ski run.

40

+3	÷ 5	× 5
-7	+12	-56
+9	× 3	Square root
-4	÷ 6	+30
+10	+25	÷ 7
-5	÷ 7	× 30
+6	× 12	+220
-9	-6	Square root
+8	÷ 6	+105
-11	× 9	Cube root
???	???	???

Pete's pies all cost a whole number of pounds.



A cherry pie costs the same as two apple pies.

A blueberry pie costs the same as two damson pies.

A cherry pie and two damson pies cost the same as an apple pie and two blueberry pies.

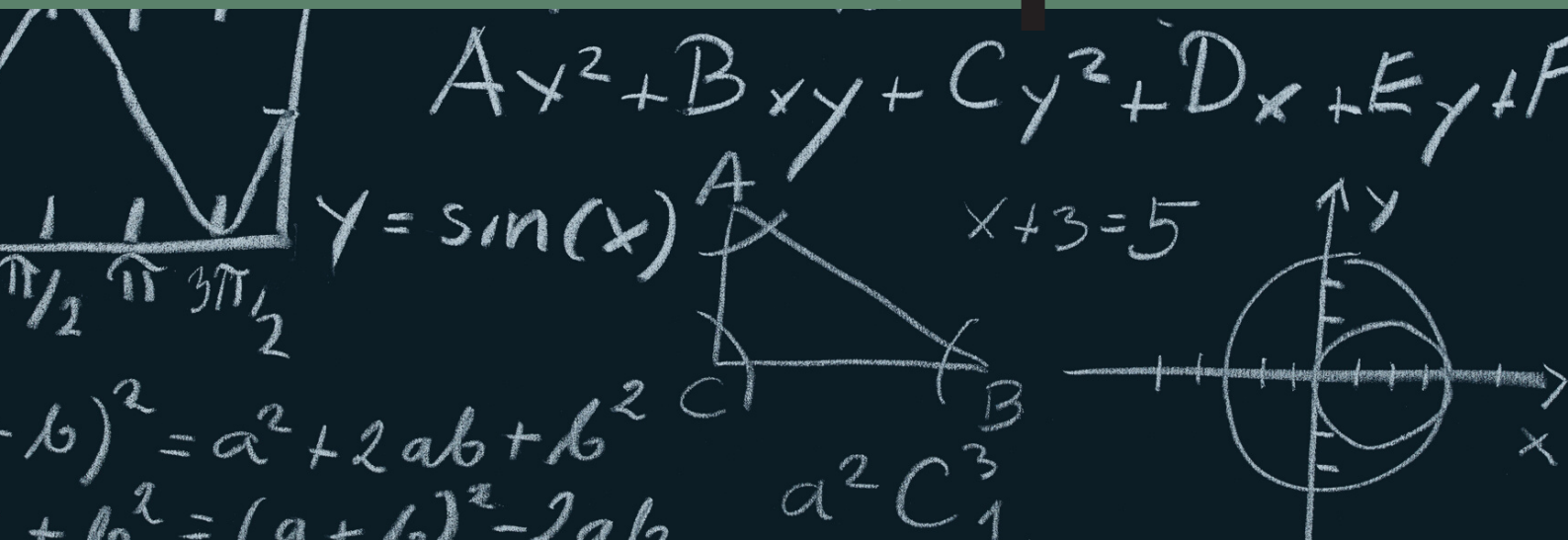


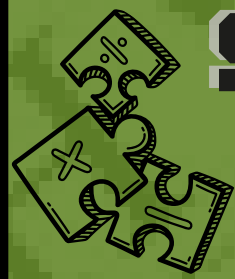
Paul buys one of each type of pie.

Which of the following could be the amount he spends?



£16 £18 £20 £22 £24





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GET INVOLVED!

If you want to help and get involved in the Mathematics newsletter then speak to your teacher. It would be great to have an input from pupils sharing their stories, homework or future job prospects.

Useful maths revision websites

- www.corbettmaths.com
- <https://www.bbc.co.uk/bitesize/subjects/z38pycw>
- <https://www.maths4everyone.com>

Fun maths videos

- https://www.ted.com/playlists/189/math_talks_to_blow_your_mind

Know your history

- <https://mathigon.org/timeline>

Get data literate with some Beautiful News

- <https://informationbeautiful.net/beautifulnews/>

Have fun with more maths activities!

- <https://mathigon.org/activities>