



# GCSE Maths



| Task                            | Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Points |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Egyptian Fractions              | Find out about Egyptian fractions.<br>There are 72 ways to represent 1 as a sum of five different Egyptian fractions,<br>How many of these 72 ways can you work out (without looking them up)?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5pts   |
| Maths Careers                   | Find 15 careers that need a Maths A level.<br>Write a brief summary about each one                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5pts   |
| Piano Tuners                    | Find out about Fermi estimation.<br>Then, stating your assumptions and showing your calculations 'estimate how many piano tuners there are in England'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5pts   |
| Ancient Babylonian Trigonometry | Research Ancient Babylonian Trigonometry and make a poster of your findings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5pts   |
| Intermediate Maths Challenge    | Complete an Intermediate Maths Challenge Paper - keep hold of your working!<br><a href="https://ukmt.org.uk/competition-papers/jsf/jet-engine:free-past-papers/tax/challenge-type:70/#free-past-paper-anchor">https://ukmt.org.uk/competition-papers/jsf/jet-engine:free-past-papers/tax/challenge-type:70/#free-past-paper-anchor</a>                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10pts  |
| Volume of a sphere              | Watch the following clip and prepare a presentation of your findings <a href="https://www.youtube.com/watch?v=2IZh-KIAQLE">https://www.youtube.com/watch?v=2IZh-KIAQLE</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10pts  |
| Penalty Kick Equation           | Read the following and make a poster of your findings<br><a href="https://tomrocksmaths.com/2017/06/05/penalty-kick-equation/">https://tomrocksmaths.com/2017/06/05/penalty-kick-equation/</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10pts  |
| Greatest Mathematician          | Read these articles <ul style="list-style-type: none"> <li><a href="https://www.theguardian.com/culture/2010/apr/11/the-10-best-mathematicians">https://www.theguardian.com/culture/2010/apr/11/the-10-best-mathematicians</a></li> <li><a href="https://www.treehugger.com/brilliant-mathematicians-and-their-impact-on-the-modern-4868832#:~:text=Carl%20Gauss%20(1777%2D1855)&amp;text=If%20Newton%20is%20considered%20the.to%20be%20a%20brilliant%20mathe">https://www.treehugger.com/brilliant-mathematicians-and-their-impact-on-the-modern-4868832#:~:text=Carl%20Gauss%20(1777%2D1855)&amp;text=If%20Newton%20is%20considered%20the.to%20be%20a%20brilliant%20mathe</a></li> </ul> <p>Write 500 words as to who you believe is the greatest mathematician and why.</p> | 15 pts |

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| Mysterious Primes        | <p>Watch the following lecture<br/> <a href="https://www.rigb.org/explore-science/explore/video/number-my5teries-curious-incident-never-ending-numbers-2006">https://www.rigb.org/explore-science/explore/video/number-my5teries-curious-incident-never-ending-numbers-2006</a></p> <p>Write a presentation explaining what you discovered to your peers</p> | 15pts |
| Existence of Santa Claus | <p>Read '<i>The Indisputable Existence of Santa Claus</i>' by Hannah Fry, Dr Thomas Oléron Evans and write a 300 word book review</p>                                                                                                                                                                                                                        | 15pts |
| Chaos                    | <p>Read <i>Chaos</i> by James Gleik and write a 400 word book review</p>                                                                                                                                                                                                                                                                                     | 20pts |