

What is Ritangle?

Ritangle is a maths competition for teams of A level Mathematics, Scottish Highers or International Baccalaureate students attending the same school/college anywhere in the world.

It is free to enter. Questions will be released over a period of approximately 10 weeks to the Ritangle website (www.integralmaths.org/ritangle) and to the Integral Twitter feed (https://twitter.com/Integral_Maths).

After the first 25 questions have been released a final (multi-part) question will be released. Answers to the first 25 questions unlock clues necessary to solve the final (multi-part) question.

Use of computers to solve problems is encouraged.

The aim is for students to have fun and to be engaged.

How do you say 'Ritangle'?

Ritangle is pronounced like 'right angle' or 'wry tangle'.

How will Ritangle work?

1. There are 25 questions prior to the final multi-part question. Answers to these release clues for the final multi-part question. The questions will be released at 09:00 GMT on the following dates via the Integral Twitter feed and to integralmaths.org/ritangle

1	01/10/2018
2	08/10/2018
3	15/10/2018
4	22/10/2018
5	29/10/2018
6	07/11/2018
7	08/11/2018
8	09/11/2018
9	12/11/2018
10	13/11/2018
11	14/11/2018

12	15/11/2018
13	16/11/2018
14	19/11/2018
15	20/11/2018
16	21/11/2018
17	22/11/2018
18	23/11/2018
19	26/11/2018
20	27/11/2018
21	28/11/2018
22	29/11/2018
23	30/11/2018
24	03/12/2018
25	04/12/2018

2. The final multi-part question will be released on 05/12/2018 at 0900.
3. To answer the final multi-part question the clues which are unlocked through correct answers to questions 1-25 must be used. How the clues are unlocked will be described at integralmaths.org/ritangle. It will not be necessary to have correct answers to all of questions 1-25 to unlock all the clues.
4. Excel could be useful for some questions; suitable help with programming in Excel and using spreadsheets will be available on the Ritangle website.
5. If a question is found to be difficult, we may give hints. Any hints will be made available via Twitter and the Ritangle website.
6. Answers to the final question will be submitted via a form on the Ritangle website.
7. Competitors or teachers can send us an e-mail about their participation in Ritangle to ritangle@integralmaths.org. This can be used for any queries about the competition. It can also be used to let us know that your school/college is participating in the competition, in which case please confirm whether you are happy for us to publicise the details. We may, for example, Tweet about it on [@Integral_Maths](https://twitter.com/Integral_Maths) and/or [@MEIMaths](https://twitter.com/MEIMaths) Twitter feeds or post it on the [@MEIMaths](https://www.facebook.com/MEIMaths) Facebook page.

Ritangle Rules

Entrants will need to tick a box on the Ritangle website indicating they agree to these to submit their entry.

1. There are no restrictions on team size. Teams should consist of students of AS/A level Mathematics, Scottish Highers or the International Baccalaureate. All the students in a team must attend the same school/college.

One student from the team must register the team and submit answers to the preliminary round and main competition; the team should agree who this will be to ensure there is only one entry per team. This student is referred to below as the Team Captain. Every student can only be in one team, including the Team Captain. Registration is via the Ritangle webpage and a team must be registered in order to submit answers to the preliminary round and to the main completion. Registration will be open from 1st October 2018 until end of 4th December 2018.

The Team Captain must inform a Nominating Teacher at their school that their team is competing, and provide that teacher with the names of all the students in their team. When registering the name of the Team Captain, e-mail address of the Team Captain, name of school/college, name of Nominating Teacher, e-mail address of Nominating Teacher must be included. The Nominating Teacher will need to be available on this email from 5th-14th December. A teacher can be the Nominating Teacher for more than one team.

So a list of the information required to register a team is

- School/college name
 - Team Captain Name
 - Team Captain E-mail Address
 - Nominating Teacher Name
 - Nominating Teacher E-mail address
2. Teams should keep evidence of their work on the questions. The judges may request to see this. It is suggested that each team nominates a member as Team Archivist to keep the team's working for the questions as they are attempted.
 3. An entry to the competition requires the submission of answers to the final question via a webform together with the information listed in 1. above. Entries will only be accepted after the final question has been posted at 0900 on Wednesday 5th December 2018. Teams may submit answers to the final question more than once, but they will need to submit all their

answers to the multi-part question each time they do this.

4. Any news, such as the discovery of an error in one of the questions, or a change in the rules, will be announced on the Ritangle website.
5. Every entry will be automatically acknowledged to the e-mail address of the student and the Nominating Teacher in 1.
6. Don't publicise/share your answers. Other people are working on the puzzle, and their work should be respected.
7. Don't publicise/share any clues released.
8. Any help with the questions is permitted, including finding information about the questions on the web and using technology. The only exception to this is that teachers should not help students directly (but help with relevant theory is fine). Team members must understand any help received, and have the working to demonstrate this (see 2).
9. The first team to submit correct answers to all parts of the final question that satisfies the judges (subject to verification as in rule 2) will be the winner. If no team makes a submission with answers to all parts of the final question correct by 0900 on Wednesday 12th December then the team that scores most highly on the final question, with scoring to be decided by the judges, will be declared the winner (subject to verification as in rule 2). If there is a tie then the team to submit the answers which gave the tied score first will be declared the winner (subject to verification as in rule 2).
10. If there is a possibility a team has won, in accordance with 9, the judges will contact the Nominating Teacher to verify details of the team and their participation. If the answer is satisfactory to the judges (see 2) then that team will be the winner.
11. The decision of the judges is final. No discussion will be entered into regarding the decision over who is the winner.
12. The winning team and the answers will be announced on the Ritangle website at 09:00 GMT on the website on Friday 14th December 2018.
13. Every team who submits a complete set of correct answers to the final question, prior to the correct answers being published (or being made available elsewhere on the web), will receive a certificate by email to the Nominating Teacher.

14. Anyone found leaking the answers or clues inappropriately and anyone found making intentional use of such leaks will be barred from receiving the prize
15. Anyone leaking the answers inappropriately and anyone making use of such a leak will be barred from receiving any prize.
16. By entering there is agreement to participate in publicity about the competition. This includes sending MEI a suitable photo of the winning team with permission that it can be used by MEI on websites, social media and printed materials.
17. The prize will be a maths hamper, including an Integral subscription for the school/college, and a trophy, and this will be awarded to the school of the winning team. Due to postage costs we reserve the right to substitute a prize of equivalent value but of less weight/bulk should the winning team be based outside mainland UK.