

emirates
aviation
university



THE EMIRATES GROUP

EAU Math Competition

(EAU- MC) 2022 - 2023



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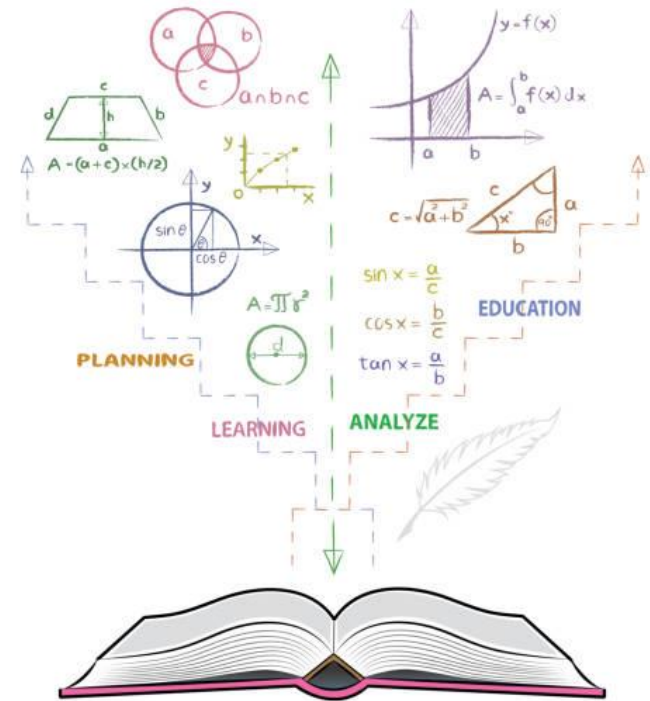
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Introduction

Emirates Aviation University (EAU) is organizing an annual Math competition for the school students who are now studying in grade 11 or grade 12. All students from different schools in the UAE are encouraged to participate. This competition engages and challenges students in solving concept-based difficult questions designed from different topics of Mathematics. Competing in math competitions is one of many ways to demonstrate a student's intellectual capacity and commitment to the field. Through practice and preparation, students will further strengthen their math skills, which will enhance their grades, in their Board exam as well as in any entrant tests for university admission.





The UAE – Math competition will enable all participants to prove their math skills and unleash their creativity. Indeed, mathematics is essential for the understanding of the world, scientific achievements, and progress, and for engineering and prosperity in our society.

There is no doubt that math education is crucial for students of all ages around the world. EAU aims to establish a competition that is accessible to all students. The students will receive the opportunity to challenge their skills, be encouraged and rewarded, and enjoy the fascinating world of mathematics.

Exam topics



Algebra



Probability



Integrated math
and comprehensive



Logical
reasoning



Computation
and numbers



Geometry

Learning outcomes

- **Algebra**

Students will define and recognize a variable with exponents. Student will write and interpret algebraic expressions using variables, addition, subtraction, multiplication and division.

- **Logical reasoning**

Students will be able to Construct a logically sound and well-reasoned argument. Avoid the various fallacies that can arise through the misuse of logic.

- **Geometry**

Students will be able to understand geometrical terminology for angles, triangles, quadrilaterals and circles. measure angles using a protractor. use geometrical results to determine unknown angles. recognise line and rotational symmetries.

- **Computation and numbers**

The learner will be able to recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems.

- **Probability**

The Learner will be able to Formulate theorems about the concept of probability. Calculate probabilities using Conditional probability, Rule of total probability and Bayes' theorem. explain the concept of a random variable and the probability distributions. Define the concept of a random variable.

Who are the targeted students for the EAU - MC?

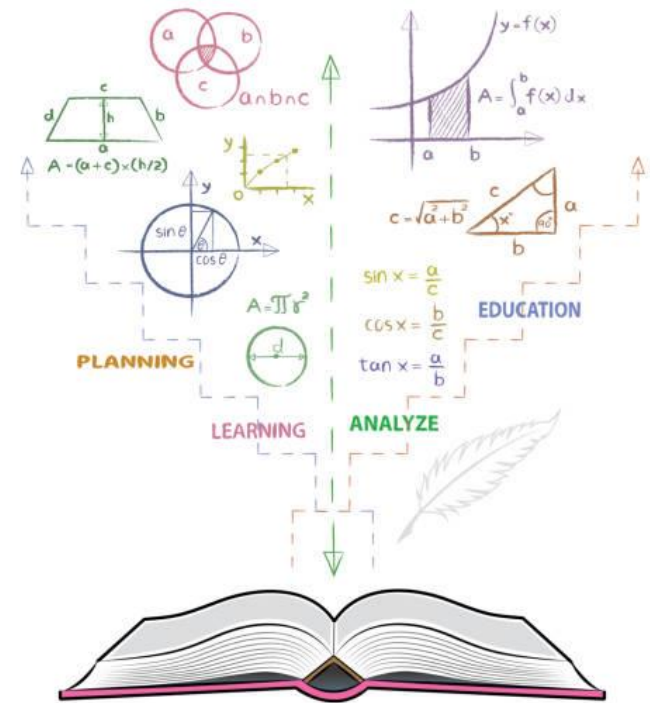
School students of grade 11 and grade 12 from the UAE are targeted for this competition.

What are the conditions and requirements of EAU - MC?

- This competition is exclusively for UAE School students of grade 11 and grade 12.
- Number of participants from each school would be maximum 5 students participating individually.
- The participants should fill and submit a registration form.
- There are no costs to participate.

What is expected from the students to deliver?

- There is only one test (MCQ).
- Exam will be computer based.
- Multiple choice based.
- Total marks of the exam will be 20, one mark for each correct answer and one negative mark for each wrong answer.



What are the outcomes of the competition?



FIRST THREE STUDENTS WILL BE
GIVEN PRIZES



OTHERS WILL RECEIVE
CERTIFICATES OF PARTICIPATION

What are the awards and prizes?

- The top three performing students in the competition will receive a 20% scholarship to attend our university. All participants will receive certificates.

What are the stages of EAU-MC?

- Participants who are interested to participate in this competition need to fill and submit a registration form before/by 15th April 2022.
- The organizing committee will send a confirmation email to the participants by 22nd April 2022.
- The winners will be announced on the same day.

How the students can register in EAU-MC?

- Participants who are interested to participate in this competition need to fill and submit a registration form through the link/QR code given below before/by 15th April 2022.
- Link: <https://forms.office.com/r/Q8Fj6EwFw8>
- QR Code:



Important dates

Date	Stage
9th March 2022	Registration opens
15th April 2022	Registration closes
12th May 2022	Competition date

Sample questions

1 When k candies were distributed among seven people so that each person received the same number of candies and each person received as many candies as possible, there were 3 candies left over. If instead, $3k$ candies were distributed among seven people in this way, then the number of candies left over would have been

- (A) 1 (B) 2 (C) 3 (D) 6 (E) 9

2 If $\frac{1}{x} = 2$ and $\frac{1}{x} + \frac{3}{y} = 3$, then the value of $x + y$ is

- (A) 3 (B) $\frac{5}{6}$ (C) $\frac{7}{3}$ (D) $\frac{7}{2}$ (E) $\frac{4}{3}$

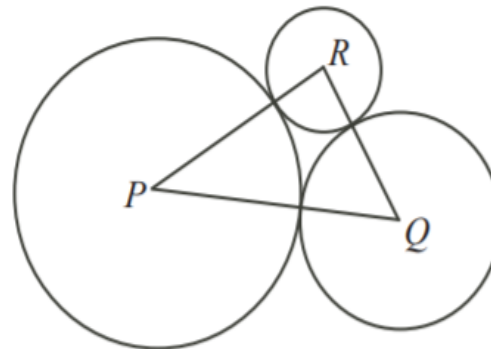
3 An *arithmetic sequence* is a sequence in which each term after the first is obtained by adding a constant to the previous term.

If the first four terms of an arithmetic sequence are a , $2a$, b , and $a - 6 - b$ for some numbers a and b , then the value of the 100th term is

- (A) -100 (B) -300 (C) 150 (D) -150 (E) 100

- 4 In a relay race, Ainslee runs the first lap in 72 seconds. Bridget runs the next lap at $\frac{9}{10}$ of Ainslee's speed. Cecilia runs the next lap at $\frac{4}{3}$ of Bridget's speed. Dana runs the last lap at $\frac{6}{5}$ of Cecilia's speed. What is their total time, to the nearest second?
- (A) 4 minutes, 48 seconds
 (B) 4 minutes, 22 seconds
 (C) 5 minutes, 27 seconds
 (D) 4 minutes, 37 seconds
 (E) 3 minutes, 46 seconds

- 5 In the diagram, the circles with centres P , Q and R have radii 3, 2 and 1 respectively. Each circle touches the other two as shown. The area of $\triangle PQR$ is
- (A) 12 (B) 6 (C) 7.5
 (D) 10 (E) 4



Questions

1

2

3

4

5

Answers

B

D

A

B

B