



2003 QAMT Competition Year 8 Paper



Attempt as many problems as you can in the time allowed. Working and explanations (even for the multiple choice problems) should be set out fully in clear English. The judges will take into consideration the quality of expression and ingenuity of your attempts at solutions.

You must put your full name and school on all working handed in.

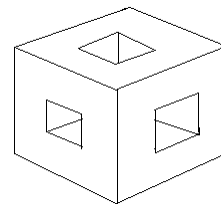
Question 1: What is the largest possible number of people at a party if no two of them have birthdays in the same month?

1 mark

- A 11 B 12 C 13 D 23 E 334

Question 2. A cube of side 3 metres has three holes, each with a side of 1 metres, running from the centre of one face to the centre of the opposite face. What is the total surface area of the solid in square metres?

1 mark



- A 24 B 48 C 72 D 78 E 84

Question 3: A rat can move around the maze shown by moving into any adjacent square. Each time it enters a square, add the number in the square to your total. What is the lowest possible total score for the rat to move from **Bed** to **Food**?

1 mark

10	7	6	Food
8	11	5	9
Bed	9	8	3

- A 26 B 28 C 29 D 30 E 34

Question 4: Four students: Antony, Birgit, Catherine and Dharma are arguing over which one of them stole the test solution. Birgit says Catherine stole it. Catherine and Dharma say they do not know who stole it. Only the guilty student was lying. Who stole the solution?

2 marks

- A Antony B Birgit C Catherine D Dharma E Not conclusive.

Question 5: A scientist is laying out 10 lights on the ground to attract an alien spacecraft. The lights lie in 5 straight lines with 4 lights in each line. Sketch the arrangement of the lights.

2 marks

Question 6: If a number with two or more digits has all of its digits in increasing order (when reading from left to right), then we call it a rising number. For example, 378 and 12 are rising numbers, but 802 and 388 are not. What is the 101st rising number?

3 marks

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