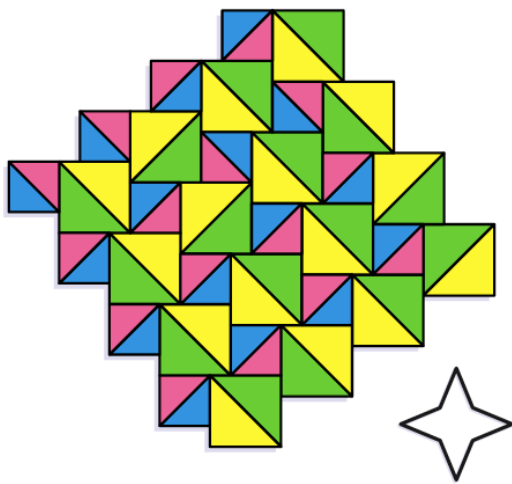




Mathematics Challenge

Issue 126

Dear students and parents, welcome to the Dulwich Mathematics Challenge. Test your brainpower, whatever your mathematical ability. If you would like to contribute a puzzle please email me at chris.stanley@dulwich-beijing.cn



In the inlay, find a perfect, four point star exactly similar to that shown below. The star can differ in size and orientation, but its outline must be full and uninterrupted.

Last week:	
1.	A
2.	E
3.	D
4.	0
5.	24°
6.	A

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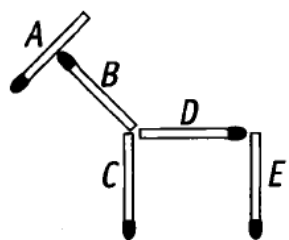
Junior Mathematical Challenge

1. The diagram shows a reindeer made from five matches. You have to move just one match to make another similar reindeer. Which match should you move?

- A B C D E

2. Which of the following is a wrong description of the '5' in 500396?

- A 500000 ones B 5000 hundreds C 500 thousands
D 50 ten thousands E 5 millions



3. Bilbo and Frodo have just consumed a plateful of cherries. Each repeats the rhyme 'Tinker, tailor, soldier, sailor, rich man, poor man, beggar man, thief' over and over again as he runs through his own heap of cherry stones. Bilbo finishes on 'sailor', whereas Frodo finishes on 'poor man'. What would they have finished on if they had run through both heaps together?

- A tinker B tailor C soldier D thief E can't be sure

JMC 1990

Junior Mathematical Olympiad

4. a, b and c are distinct (real) numbers. How many (real) values of x satisfy the equation: $ax + b = bx + c = cx + a$?

June 2013 Mentoring

5. In the equation $2u + v + w + x + y + z = 3$, the numbers u, v, w, x, y and z are non-negative integers. How many solutions does this equation have?

October 2013 Mentoring

Intermediate Olympiad

6. A group of 25 people consists of knights, serfs and damsels. Each knight always tells the truth, each serf always lies, and each damsel alternates between telling the truth and lying. When each of them was asked: "Are you a knight?", 17 of them said "Yes". When each of them was asked: "Are you a damsel?", 12 of them said "Yes". When each of them was asked: "Are you a serf?" 8 of them said "Yes". How many knights are in the group?

- A 4 B 5 C 9 D 13 E 17

Grey 2014