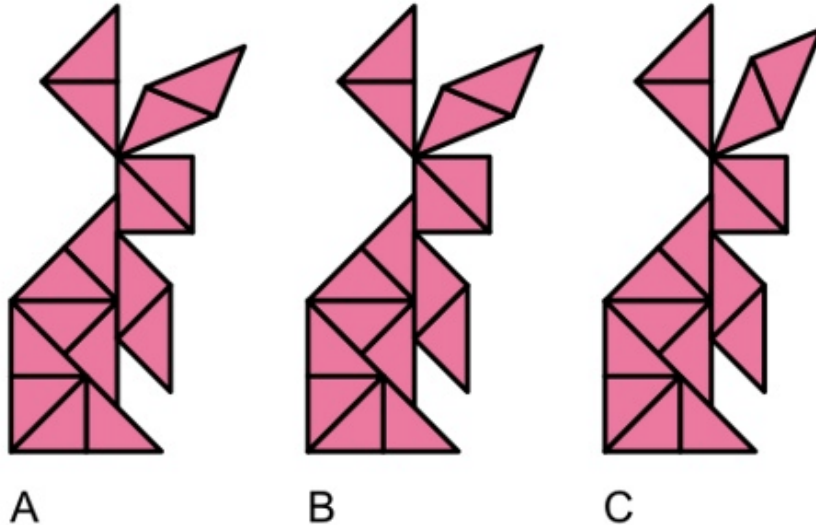# Mathematics Challenge

Issue 121

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

Which is the odd one out?

A   B   C

Last week:	
1.	A
2.	C
3.	B
4.	16
5.	0.5x
6.	1 : 1

Junior Mathematical Challenge

1. In 1990, 1 February fell on a Thursday. On what day of the week did April Fools' Day fall that year?

A Sunday   B Monday   C Wednesday   D Thursday   E Friday

2. I start with a square, increase one side by 3cm and decrease an adjacent side by 2cm to form a rectangle of area 24cm². Find the perimeter of the rectangle (in cm).

A 20   B 22   C 24   D 28   E 30

P3

3. Amita has twice as much money as Bill, and Cathy has half as much again as Amita has. If Cathy has 20p less than Drusia has and Drusia has £2, how much money does Bill have?

A 30p   B 60p   C 80p   D £1.20   E £1.80

P5

Junior Mathematical Olympiad

4. For each positive two-digit number, Jack subtracts the units digit from the tens digit; for example, the number 34 gives 3 – 4 = -1. What is the sum of all his results?
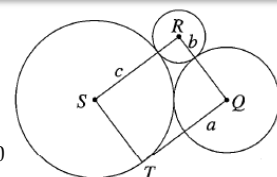
5. In the diagram, the rectangle ABCD is divided into three congruent rectangles. The line segment JK divides CDFG into two parts of equal area. What is the area of triangle AEI as a fraction of the area ABCD?

JMO 2008
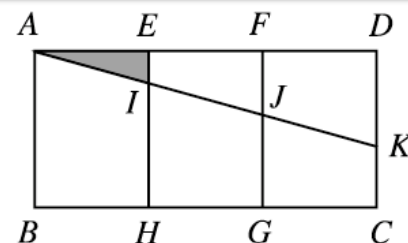
Intermediate Olympiad

6. The diagram shows three touching circles, whose radii are a, b and c, and whose centres are at the vertices Q, R and S of a rectangle QRST. The fourth vertex T of the rectangle lies on the circle with centre S. Find the ratio a : b : c.

Hamilton 2010