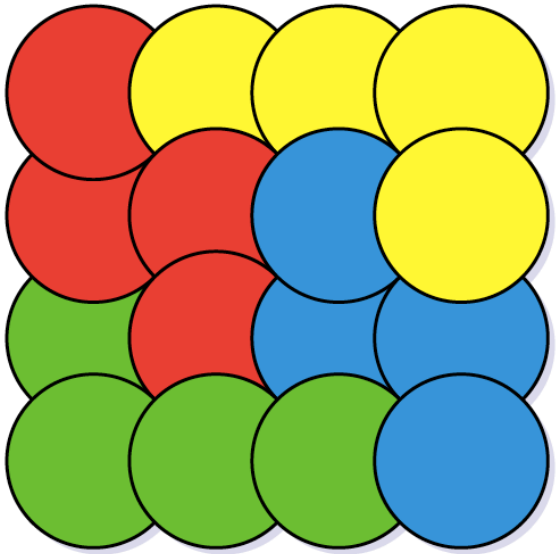
Mathematics Challenge

Issue 136

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



The shape consists of overlapped colour circles. Which two colours have their total visible area equal?

Last week:
1. **A**
2. **E**
3. **B**
4. **5**
5. **All odd primes**
6. **none**

Junior Mathematical Challenge

1. A recipe for eight flapjacks need 2 oz butter, 3 oz sugar and 4 oz rolled oats. How many flapjacks can I make if I have 14 oz butter, 15 oz sugar and 16 oz rolled oats?

A 40 B 32 C 44 D 56 E none of these

2. Arash runs faster than Betty, and Dovey will always beat Chandra in a race. Betty is never beaten by Edwina. One day all five race against each other. Just one of the following results is possible. Which is it? (ABCDE indicates 'Arash first, …')

A ABCDE B BEDAC C ABCED D ADBCE E ADCEB

3. How big is the angle between the hour hand and the minute hand of a clock at twenty to five?

A 100° B 25° C 90° D 105° E 80°

JCM 1988

Junior Mathematical Olympiad

4. The date 29.2.92 is interesting: it is a palindromic date because it reads the same both forwards and backwards. How many palindromic dates are there between 1910 and 1999?

5. Does there exist a two-digit number 'ab' such that the difference between 'ab' and its reverse 'ba' is a prime number?

JMO 1992

Intermediate Olympiad

6. The numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 are to be written around a circle in some order. Then each number will be added to its immediate neighbours to obtain ten new numbers. What is the largest possible value of the smallest of these new numbers?

A 14 B 15 C 16 D 17 E 18

Pink 2013