Mathematics Challenge

Issue 138

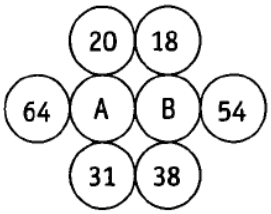
Dear students and parents, welcome to the Dulwich Mathematics Challenge. Test your brainpower, whatever your mathematical ability. If you would like to contribute a puzzle please email me at chris.stanley@dulwich-beijing.cn

How many triangles of any size can you see in the tree?

Last week:
1. **B**
2. **C**
3. **C**
4. **1700km /h**
5. **45°**
6. **D**

Junior Mathematical Challenge

1. Ali (A) and Baba (B) are shown surrounded by six theives. The theives' ages are given. Ali's age is the average of his four nearest neighbours, and so is Baba's. How old is Ali?



A 37 B 37½ C 38⅓ D 42¼ E 38

2. Tony owes Tina 40p. Then Tina borrows 50p from Tony. Later Tony gives Tina 60p. Who has to pay what to whom to square things up?

A Tony gives Tina £1.50 B Tony gives Tina 70p C Tony gives Tina 50p
D Tina gives Tony 70p E Tony gives Tina 30p

JMC 1990

3. On my calculator ⅓ = 0.3333333. What would *130* be?

A 00.333333 B 0.3030303 C. 0.3333333 D. 0.0303030 E. 0.0333333

JMC 1988

Junior Mathematical Olympiad

4. ABCD is a square. M is the midpoint of BC and N is the midpoint of AD. The circle through M with centre N cuts CD at P. How big is the angle PNM?

5. Find a number less than 100 which is increased by 20% when its digits are reversed.

JMO 1991

Intermediate Olympiad

6. Janet enters all the digits from 1 to 9 in the cells of a 3 × 3 table, so that each cell contains one digit. She has already entered 1, 2, 3 and 4, as shown. Two numbers are considered to be 'neighbours' if their cells share an edge. After entering all the numbers, she noticed that the sum of the neighbours of 9 is 15. What is the sum of the neighbours of 8?

1		3
2		4

A 12 B 18 C 20 D 26 E 27

Grey 2014