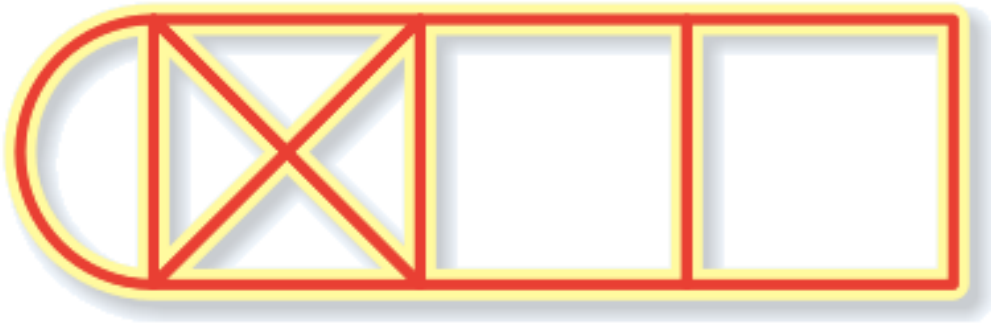
Mathematics Challenge

Issue 133

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

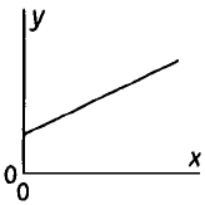
Can you draw this yourself without taking your pencil off the paper or going along the same line twice?



Last week:
1. **D**
2. **B**
3. **D**
4. **18**
5. **22**
6. **18.40**

Junior Mathematical Challenge

1. Which of the following could this graph not represent?



A x = time after midnight, y = depth of water in the harbour
B x = time after throwing, y = speed of a rock falling down a well
C x = weight in grams, y = weight in ounces
D x = temperature in °C, y = temperature in °F
E x = age of child, y = height of that child

2. Each letter stands for a different digit. Which letter has the lowest value?

A U B K C S D M E C

3. If all plinks are plonks and some plunks are plinks, which of these statements X, Y, Z *must* be true?

X: All plinks are plunks Y: Some plonks are plunks Z: Some plinks are not plunks

A X only B Y only C Z only D X & Y only E Y & Z only

JMC 1991

Junior Mathematical Olympiad

4. A sequence of fractions obeys the following rule: given any two successive terms a, b of the sequence, the next term is obtained by dividing their product a.b by their sum a + b. If the first two terms are 1/2 and 1/3, write down the next three terms. What is the tenth term?

JMO 1994

5. Which multiple of 11 is nearest 1000?

JMO 1992

Intermediate Olympiad

6. A gardener wants to plant 20 trees along one side of an avenue. He decides to use a mixture of maple trees and linden trees. The number of trees between any two maple trees must not be equal to three. What is the largest number of maple trees that the gardener can plant?

Grey 2013