

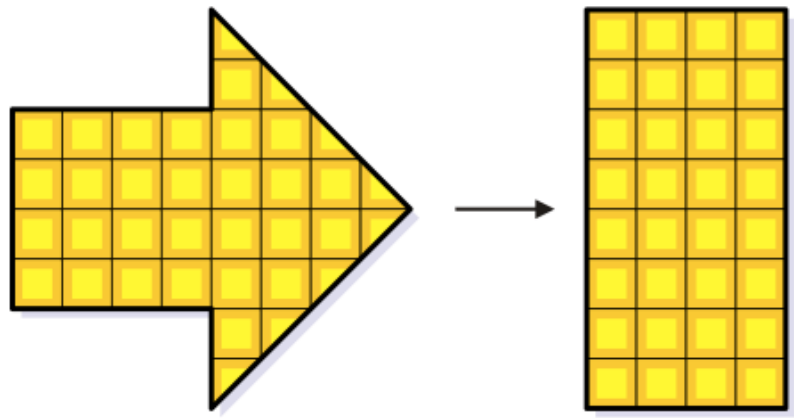


Mathematics Challenge

Issue 127

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

Divide the arrow on the left into three pieces that could be rearranged into the rectangle on the right. The pieces must be different shapes and areas and the cuts should go through the lines of the grid. The pieces can be rotated or flipped.



Last week:	
1.	E
2.	E
3.	B
4.	0
5.	40
6.	B

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Junior Mathematical Challenge

1. Fill the empty squares with As, Bs, Cs, Ds, Es so that no line (horizontal, vertical or inclined at 45°) contains a letter more than once. Which letter goes in the square marked *?

A B C D E
2. Nine bus stops are equally spaced along a bus route. The distance from the first to the third is 600m. How far is it from the first to the last?

A 600m B 1600m C 1800m D 2400m E 2700m
3. Snow White wanted to know the mean height of the Seven Dwarves. So one day she measured them all as they left for work and calculated their mean height (correct to one decimal place) as 112.3cm. Doc complained that she had missed him out and had measured Dopey twice without him noticing. If Doc is 3 cm taller than Dopey, what is the mean height of the Seven Dwarves?

A 111.9cm B 112.3cm C 112.7cm D 113.8cm E 115.3cm
- | | | | | |
|--|---|---|--|---|
| | * | A | | |
| | E | | | B |
| | | | | |
| | | | | |
| | | C | | |

JMC 1991

Junior Mathematical Olympiad

4. A number n consists of 7 different digits and is divisible by each of these digits. Which digits can n not include?
November 2013 Mentoring
5. Find the six integers which satisfy the equation $(x^2 - 5x + 5)^{(x-5)(x-6)} = 1$.
December 2013 Mentoring

Intermediate Olympiad

6. Tatiana wrote down in ascending order the list of all 7-digit numbers that contain each of the digits 1, 2, 3, ..., 7. She then split the list exactly at the middle into two parts of the same size. What is the largest number in the first half?

A 1234567 B 3765421 C 4123567 D 4352617 E 4376521