注意：

允許學生個人、非營利性的圖書館或公立學校合理使用本基金會網站所提供之各項試題及其解答。**可直接下載而不須申請**。

重版、系統地複製或大量重製這些資料的任何部分，必須獲得財團法人臺北市九章數學教育基金會的授權許可。

申請此項授權請電郵 ccmp@seed.net.tw

Notice:

Individual students, nonprofit libraries, or schools are permitted to make fair use of the papers and its solutions. Republication, systematic copying, or multiple reproduction of any part of this material is permitted only under license from the Chiuchang Mathematics Foundation.

Requests for such permission should be made by e-mailing Mr. Wen-Hsien SUN ccmp@seed.net.tw

Po Leung Kuk

19th Primary Mathematics World Contest

Individual Contest 2016(Final)

Question 1

In the 11-digit number below, the sum of every 3 adjacent digits is 24. What is the value of X?

8		X								9

Question 2

How many 4-digit numbers can be written as the product of three consecutive prime numbers such that the thousands digit and the units digit are the same?

Question 3

Find the 6-digit number $\overline{ABCDEF}$ such that:

$A > B > C > D > E > F$ and every 2 adjacent digits form a 2-digit number which is divisible by 3.

Question 4

Find the sum of all integers that are equal to a 2-digit square number multiplied by a 1-digit prime number.

Question 5

How many positive divisors does the product of 12×11×10×...×3×2×1 have?

Question 6

Find the smallest multiple of 35 that ends with '35' and the sum of its digits is 35.

Question 7

What is the sum of all 3-digit numbers formed using only odd digits?

Question 8

Arrange the following 5 numbers in descending order: 2^{847}, 3^{539}, 5^{363}, 7^{308}, 11^{242}.

Question 9

Calculate $\dfrac{504^2-503^2+502^2-501^2+\ldots+4^2-3^2+2^2-1}{2016+2012+2008+\ldots+8+4}$.

Question 10

A polygon has ten times as many diagonals as it has sides. How many vertices does this polygon have?

Question 11

Given that A is a positive integer. If A^2 is divisible by 5, $(A+1)^2$ is divisible by 7 and $(A+2)^2$ is divisible by 9, what is the smallest possible value for A?

Question 12

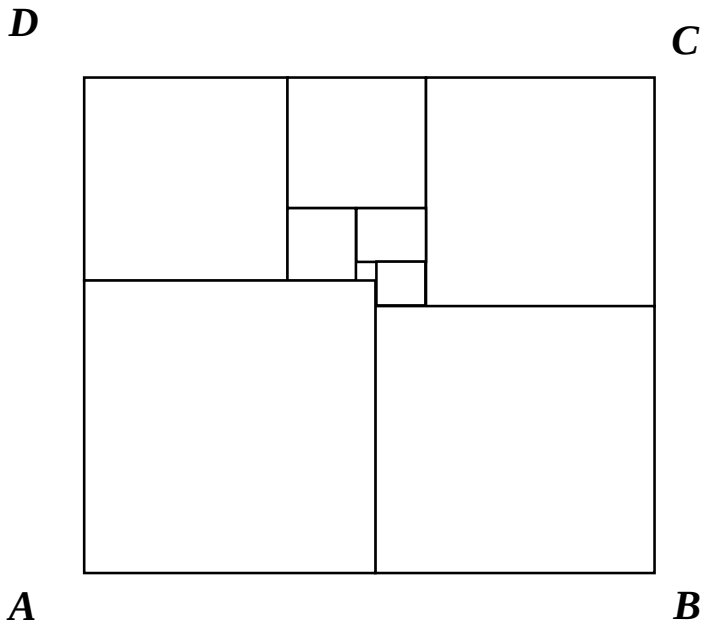
Find the value of $\frac{4}{1\times3}-\frac{8}{3\times5}+\frac{12}{5\times7}-\frac{16}{7\times9}+\ldots+\frac{36}{17\times19}-\frac{40}{19\times21}$.

Question 13

In a chess tournament, every player plays against every other player exactly once. One point is awarded for a win, half a point for a draw/tie and no points for a loss. At the end of the tournament, the sum of the points scored by all players is equal to 2016. How many players took part in this tournament?

Question 14

The following rectangle *ABCD* is made up of nine squares. If the area of the smallest square is 4 cm^2, what is the area of the rectangle *ABCD* in cm^2?



Question 15

In the figure below, $\triangle ABC$ and $\triangle ODC$ are right angle triangles. Six semi-circles are drawn with their centers indicated by dots as shown. Find the ratio of the areas $\frac{S_1 + S_2 + S_3}{S}$.

