亞洲國際數學奧林匹克聯合會

ASIA INTERNATIONAL MATHEMATICAL OLYMPAID UNION

亞洲國際數學奧林匹克公開賽初賽

Asia International Mathematical Olympiad Open Trial

小二組 Grade 2

時限：70 分鐘

Time allowed: 70 minutes

試題

Question Paper

本試題不可取走。

THIS QUESTION PAPER CANNOT BE TAKEN AWAY.

未得監考官同意，切勿翻閱試題，否則參賽者將有可能被取消資格。

DO NOT turn over this Question Paper without approval of the examiner.
Otherwise, contestant may be DISQUALIFIED.

請將答案寫在 答題紙 上。

All answers should be written on the ANSWER SHEET.

甲部：每題 4 分

Section A – each question carries 4 marks

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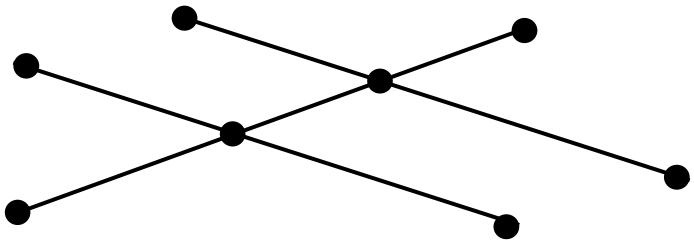
1) 下圖有多少條線段？

How many line segments are there in the figure below?

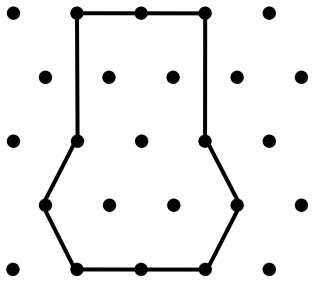


第 1 題

Question 1

2) 參考附圖，圖中每三個相鄰點組成的三角形面積都是 1 平方厘米，求圖形的面積。

In the figure, the area of each equilateral triangle formed by three neighboring points is 1cm^2. Find the area of the figure.



第 2 題

Question 2

3) 求 $71+57+62+38+43+29$ 的值。

Find the value of $71+57+62+38+43+29$.

4) 求 $15-(79-85)+74$ 的值。

Find the value of $15-(79-85)+74$.

5) 已知一呎等於 12 吋。有一條 18 呎長的繩子，如果將它剪成每 2 呎 3 吋為 1 段，共可剪成多少段？

It is known that 1 foot equal 12 inches. A 18-foot long rope is cut into segments 2 feet 3 inches long. How many segments are cut in this way?

請以最簡形式填寫答案。若計算結果是分數，請化至最簡，並確保為真分數或帶分數，或將計算結果寫成小數。

答案可以根式表示，唯該根式必須是最簡形式。除特別註明外，毋需填寫單位。錯誤單位將不給予任何分數。

Write down the answer in the simplest form. If the calculation result is a fraction, please write down the answer as a proper or mixed fraction, decimal figure is also accepted. You may use square root to represent the answer which is in the simplest form.

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6) 一班小朋友排隊，第一隊有 34 人，第二隊有 17 人，第三隊有 63 人。最少要從第三隊移動小朋友至其他隊伍才能使三隊人數相等？
A group of children form 3 queues. The first queue has 34 children, the second queue has 17 students, the third queue has 63 children. How many children, at least, are needed to move from the third queue to other queues to make the number of children in each queue equal?

7) 已知某個柱體有 12 個頂點，問該柱體有多少條棱邊？
It is known that a right prism has 12 vertices, how many edges does that prism has?

8) 小明想買一支價值 3.4 元的筆而不想找續，他身上有很多 1 元，5 角和 2 角，問他有多少不同的貨幣組合去付款？
Charles wishes to buy a $3.4 pen without changes. How many ways can he pay for the product if he has a lot of each $1, 50 cents and 20 cents coin?

~ 甲部完 ~
~ End of section A ~

乙部：每題 5 分
Section B – each question carries 5 marks

9) 求$18+27-36-45-54-63+72+81$的值。
Find the value of $18+27-36-45-54-63+72+81$.

10) 求$(32+33+34+\ldots+46)-(26+27+28+\ldots+40)$的值。
Find the value of $(32+33+34+\ldots+46)-(26+27+28+\ldots+40)$.

11) 小偉和小威共有 74 條香蕉；若小偉比小威多 26 條香蕉，問小偉有多少條香蕉？
William and David has a total of 74 bananas. David has 26 more bananas than William. How many bananas does David have?

12) 如果有 15 個泥膠小球和 28 枝竹籤，問利用這些材料做成的錐體底部是一個甚麼邊形？(不可以把泥膠小球分開作多個小球用，也不可以把竹籤弄斷。)
A pyramid is formed by using 15 clay balls and 28 bamboo sticks. If the base of the pyramid is a polygon. How many sides does the polygon have?
(Clay balls cannot be broken down as several balls, and the sticks cannot be bent)

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13) 一個小組有 8 位同學，每位同學都要和其餘每一位同學合照一張，而且每張合照只有兩位同學。問一共要照多少張照片？
A group contains 8 students and each student needs to take a photo with the others. If there are only 2 people in each photo, how many photos in total will be taken in this way?

14) 參考附圖，已知圖中算式謎中的 A、B、C 和 D 皆為一位整數，求圖中算式謎中 $A+B+C$ 的值。
In the attached cryptarithm, each of A, B, C, and D each represents a one-digit integer. Find the value of $A+B+C$.

$$\begin{array}{cccc} & \boxed{A} & 2 & 7 \\ & 4 & 7 & \boxed{C} \\ + & & \boxed{B} & 2 \\ \hline & 7 & 3 & 2 \end{array}$$

第 14 題
Question 14

15) 小強打算由下午 2 時正開始看三套片長都是 100 分鐘的電影，若果他看完每套電影後都會休息 40 分鐘，那麼他看完最後一套電影是下午甚麼時間？
Starting from 2p.m., Johnny watches three movies each 100 minute long. If Johnny takes a 40-minute break after watching each movie, what is the time after he finished all the movie. (Express your answer in terms of XX:XX pm)

16) 求 $(2016\times1+1916\times2+2716\times3)\div(679\times12+3832+2016)$ 的值。
Find the value of $(2016\times1+1916\times2+2716\times3)\div(679\times12+3832+2016)$.

~ 乙部完 ~
~ End of section B ~

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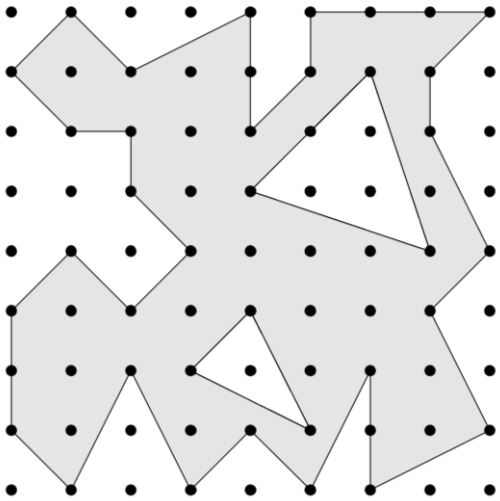
丙部：每題 7 分

Section C – each question carries 7 marks

17) 參考附圖，每個小正方形的面積是 1 平方單位，試求附圖中陰影部分的面積。
In the figure, the area of the each smallest square is 1 unit square. Find the area of the shaded region.



第 17 題
Question 17

18) 小詩有 5 元、2 元和 1 元的硬幣各 4 枚，同這些硬幣可組成多少種不同的面值？(註：0 不計算在內)
Christy has some $5, $2 and $1 coin. She has 4 coins of each type. How many different face values can she form using those coins?

19) 參考附圖，已知圖中算式謎中的 A、B、C 和 D 皆為一位整數。求四位數 $\overline{ABCD}$ 的值。
In the attached cryptarithm, each of A, B, C, and D each represents a one-digit integer. Find the value of the 4-digit number $\overline{ABCD}$.

$$\begin{array}{rcccc} & & & A & B \\ & & A & B & C \\ + & A & B & C & D \\ \hline & 2 & 0 & 1 & 6 \end{array}$$

第 19 題
Question 19

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請將答案寫在 答題紙 上。
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20) 216 個圓球中有一個較輕的球，其餘的均重量相等。若要用一座沒有砝碼的天平將較輕的球找出來，請問最少要秤多少次才能保証將那個圓球找出來？
There are 216 balls. One of the balls is lighter than the others and the others carry equal weights. By using only a balance, at least how many times are needed to find the lighter ball?

~ 全卷完 ~
~ End of Paper ~

請以最簡形式填寫答案。若計算結果是分數，請化至最簡，並確保為真分數或帶分數，或將計算結果寫成小數。
答案可以根式表示，唯該根式必須是最簡形式。除特別註明外，毋需填寫單位。錯誤單位將不給予任何分數。
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