

**亞洲國際數學奧林匹克聯合會**  
**ASIA INTERNATIONAL MATHEMATICAL OLYMPIAD UNION**



**亞洲國際數學奧林匹克公開賽初賽**  
**Asia International Mathematical Olympiad Open Trials**

**小六組 Grade 6**

時限：70 分鐘

Time allowed: 70 minutes

**樣本試題**  
**Sample Questions**

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) 小明放學回家，他可以選擇先往圖書館或直接回家，已知從學校到圖書館有 2 條路線、圖書館回家有 3 條路線，直接回家有 4 條路線，問小明共有多少條路線回家？

There are two approaches for Charles to go home, either he directly goes home or goes home via the library. If there are 2 routes from the school to the library, 3 routes from the library to his home, and 4 ways to go home directly, how many different ways are there for Charles to go home?

- 2) 把  $17 \div 22$  以循環小數的形式表示。

Represent  $17 \div 22$  in recurring decimals.

- 3) 求  $2016 \times 1984$  的值。

Find the value of  $2016 \times 1984$ .

- 4) 小食店出售一批糖果，每粒定價 8 元。當賣出一半時，小食店已收回全部成本，當賣完剩下的糖果時又增加盈利 400 元。求這批糖果的數量。

The confectionary sells some candies at a price of \$8. When half of the candies are sold, the cost are covered; when candies are sold he has a profit of \$400. How many candies are there?

5)

6)

7)

8)

~ 甲部完 ~  
~ End of section A ~

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.

Unless otherwise stated, no need to write down any unit. Marks will NOT be given for incorrect unit.

請將答案寫在 答題紙 上。

All answers should be written on the ANSWER SHEET.

乙部：每題 5 分

Section B – each question carries 5 marks

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- 9) 小蘭、小華等 20 個小朋友中選 3 個參加比賽，如果要求小蘭或小華當中最少一人一定要參加，問有多少種不同的方法？

Among 20 students including Lan and Wah, 3 are chosen to join a competition. If at least one of Wah and Lan has to join the competition, how many different ways are there to choose the 3 students?

- 10) 求  $0.\dot{3}\dot{6} + 0.\dot{2}9\dot{6}$  的值，並以最簡分數表示答案。

Find the value of  $0.\dot{3}\dot{6} + 0.\dot{2}9\dot{6}$  and show your answer in fractions.

- 11) 求  $49\frac{38}{63} + 4\frac{121}{126} + \frac{125}{252} + \frac{25}{504} + \frac{5}{1008} + \frac{1}{2016}$  的值。

Find the value of  $49\frac{38}{63} + 4\frac{121}{126} + \frac{125}{252} + \frac{25}{504} + \frac{5}{1008} + \frac{1}{2016}$ .

- 12) 某商店購入了一批食品，按期望 60% 的盈利率定價，當售出了當中的 60% 後，為了盡早賣完，商店以半價進行促銷。賣完全部食品後商店所得的實際盈利率是多少？（以 % 表示答案）

A shop buys some food and mark the price at an expected profit of 60%. After 60% of the product are sold, the shop sold the remaining product at half the price. What is the percentage profit of the shop selling this food?

13)

14)

15)

16)

~ 乙部完 ~  
~ End of section B ~

請將答案寫在 答題紙 上。

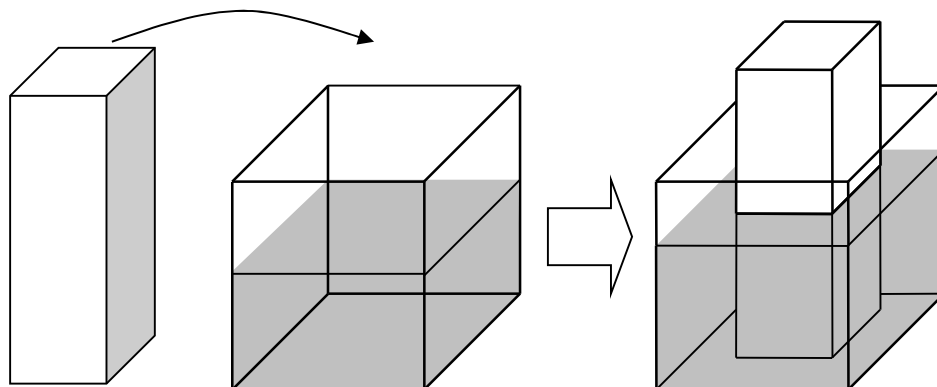
All answers should be written on the ANSWER SHEET.

丙部：每題 7 分

Section C – each question carries 7 marks

- 17) 附圖中正方體容器的底內側邊長 54 厘米，內有深 25 厘米的油漆。長方體的鐵柱的底面為一個邊長 36 厘米的正方形，將鐵柱慢慢地垂直放進容器內，使長方體的底緊貼著容器內側的底面。已知沒有油漆濺出，油漆亦沒有淹沒鐵柱頂部，求鐵柱染上油漆的面積。(以平方厘米表示答案)

The figure below shows a cubic container whose inner length is 54cm containing paint with 25cm deep. The base of the iron cuboid is a square with side length 36cm. The iron cuboid is inserted vertically into the container until the base the cuboid reaches the inner base of the cubic container. It is known that no paint is spilled and the cuboid is not fully submerged in the paints. Find the area of the cuboid in paints.



第 17 題  
Question 17

- 18) 在 5 時某分，「6」字剛好在時針和分針的正中間。請問多少分鐘後，「6」字會再次剛好在時針和分針的正中間？(以分數表示答案)

At certain minutes past 5, '6' on the clock is at the middle of the minute-hand and the hour-hand. How many minutes later '6' on the clock is at the middle of the minute-hand and the hour-hand again?

19)

20)

~ 全卷完 ~  
~ End of Paper ~

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