



Math Conceptition

2023

P4

Question Booklet

問題簿

Time: 50 Minutes

Calculators are NOT permitted.

Instructions:

- 1. DO NOT OPEN THIS QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.**
- 2. If the information printed on your answer sheet is not correct, please inform the invigilator immediately.**
- 3. Please use a pencil and write your answers neatly ONLY on the answer sheet provided. DO NOT write or draw in the circle next to each answer box. No mark will be given if you failed to follow this instruction.**
- 4. Unless otherwise specified, all answers must be in exact value and in its simplest form. Writing the units for the answers is NOT necessary.**
- 5. Rough-work sheets provided will be collected at the end of the contest but they will not be marked.**
- 6. Diagrams in this question booklet are not necessarily drawn to scale.**

限時：50 分鐘

不允許使用計算機。

比賽須知：

- 1. 未宣布開始前，切勿翻閱此問題簿。**
- 2. 請核對答題紙上列出的資料是否與你相符。如有問題，請舉手。**
- 3. 所有答案必須寫在答題紙內，並須用鉛筆作答。請勿填寫或畫花題號後方的圓圈，否則該題答案將會作廢。**
- 4. 除非題目特別表明，所有答案均不需填寫單位，但必須以準確數值及最簡方式表示。**
- 5. 比賽完結時監考員會收回桌上的草稿紙，但草稿紙上所書寫的任何文字或圖表將不獲評閱。**
- 6. 此問題簿的附圖不一定依比例繪成。**

- 1) $15 \times 36 = ?$ [1%]
- 2) $96 \div 12 = ?$ [1%]
- 3) $406 \times 28 = ?$ [1%]
- 4) $864 \div 27 = ?$ [1%]
- 5) $22 \times 19 \times 50 = ?$ [1%]
- 6) $952 \div 17 \div 14 = ?$ [1%]
- 7) $34 \times 238 + 262 \times 34 = ?$ [1%]
- 8) $506 - 418 \div 22 \times 16 = ?$ [1%]
- 9) $189 + 756 \div 63 - 18 = ?$ [1%]
- 10) $(8200 - 7521) \times 24 + 321 \times 24 = ?$ [1%]
- 11) $492 - (387 - 9 \times 29) = ?$ [1%]
- 12) $185 + 518 \div (14 + 23) = ?$ [1%]

For question 13 to 15, the answers must be expressed in proper fraction, integer or mixed number.

由第 13 至 15 題，答案必須以真分數、整數或帶分數表示。

13) Evaluate $\frac{35}{39} - \frac{16}{39} + \frac{34}{39}$. [1%]

計算 $\frac{35}{39} - \frac{16}{39} + \frac{34}{39}$ 。

14) Evaluate $7 - 1\frac{5}{9} - 2\frac{8}{9}$. [1%]

計算 $7 - 1\frac{5}{9} - 2\frac{8}{9}$ 。

15) Evaluate $8\frac{2}{11} - \left(4\frac{7}{11} - 1\frac{9}{11}\right)$. [1%]

計算 $8\frac{2}{11} - \left(4\frac{7}{11} - 1\frac{9}{11}\right)$ 。

- 16) A is a prime number. If $1\frac{31}{38} < \frac{A}{38} < 2\frac{5}{38}$ and $\frac{37}{A} < \frac{1}{2}$, find the value of A . [2%]

A 是一個質數。如果 $1\frac{31}{38} < \frac{A}{38} < 2\frac{5}{38}$ 和 $\frac{37}{A} < \frac{1}{2}$ ，求 A 的值。

- 17) One of the angles of a figure is an obtuse angle. If two of its sides are a pair of parallel lines, which of the following shapes does the figure belong to? List all possible answers. [2.1%]

某圖形的其中一個角是鈍角。如果它其中的兩條邊是一對平行線，該圖形屬於下列哪個形狀？列出所有可能的答案。

- A) Square 正方形 B) Rectangle 長方形
 C) Rhombus 菱形 D) Isosceles triangle 等腰三角形
 E) Trapezium 梯形 F) Parallelogram 平行四邊形

- 18) Find the Highest Common Factor of 156, 234 and 273. [2.2%]

求 156、234 和 273 的最大公因數。

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- 19) A parallelogram is formed by 4 identical isosceles triangles. 2 of the sides of the triangle are 8 cm and 10 cm. If one of the sides of the parallelogram is 16 cm, what is the perimeter of the parallelogram in cm? [2.3%]

一個平行四邊形是由四個相同的等腰三角形所組成。三角形的其中兩條邊是 8 厘米和 10 厘米。如果平行四邊形的其中一條邊是 16 厘米，那麼平行四邊形的周界是多少厘米？

- 20) A box of colour pens costs \$864, containing 24 colours of pens. [2.4%]
There are a half dozen pens of each colour. How much do
26 colour pens cost in dollars?

一盒顏色筆的售價為 864 元，當中包括 24 種顏色，而每種顏色有半打筆。那麼 26 枝顏色筆的售價是多少元？

- 21) There were 3 pizzas on a table. Mike and Nick each ate $\frac{5}{8}$ of a [2.5%]
pizza, while Pasty and Sue ate $\frac{3}{8}$ of a pizza and $\frac{1}{8}$ of a pizza
respectively. How many pizzas are left? Give the answer in its
simplest form.

桌子上有 3 個薄餅。仲禮和偉成各吃了 $\frac{5}{8}$ 個薄餅，而美欣和妍
婷分別吃了 $\frac{3}{8}$ 個和 $\frac{1}{8}$ 個薄餅。桌子還餘下薄餅多少個？答案
必須約至最簡。

- 22) A pack of red beans weighs 650 g. A pack of green beans is 117 g lighter than a pack of red beans. If 2 packs of green beans are mixed with 3 packs of red beans, and the mixed beans are divided into 13 bowls evenly, how many grams does each bowl of mixed beans weigh? [2.6%]

一包紅豆重 650 克，一包綠豆較一包紅豆輕 117 克。如果把 2 包綠豆和 3 包紅豆混合後平均分為 13 碗，每碗混合的豆重多少克？

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- 23) Express 12.0625 as a fraction in its simplest form. [2.7%]
- 把 12.0625 改寫成分數，並約至最簡。

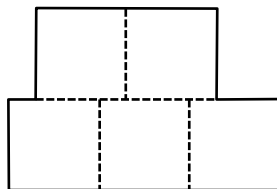
- 24) If the 6-digit number $89A32A$ is divisible by 6, find A . [2.8%]

如果六位數 $89A32A$ 可以被 6 整除，求 A 。

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- 25) A rectangle of perimeter 432 cm is cut into five identical squares. [2.9%]

The squares are used to form the figure below. What is the perimeter of the figure in cm?

一個周界為 432 厘米的長方形切開成五個相同的正方形。這些正方形被用作組成以下的圖形。圖形的周界是多少厘米？



26) Find the Least Common Multiple of 24, 90 and 110.

[3%]

求 24、90 及 110 的最小公倍數。

27) If Ronald gives $\$12\frac{3}{10}$ to David, they will have the same amount of [3.1%]

money. On the other hand, if Queenie gives $\$22\frac{3}{5}$ to Ronald, they will also have the same amount of money. How much more does Queenie have than David?

如果少燻給永豪 $\$12\frac{3}{10}$ ，他們將會有相同金額。另一方面，如果寶怡給少燻 $\$22\frac{3}{5}$ ，他們亦會有相同金額。那麼寶怡有的金額比永豪多多少元？

- 28) A square of perimeter 3.36 m is formed by 21 identical rectangles. [3.2%]
If the length of a rectangle is 28 cm, the perimeter of the rectangle is ? cm.

一個周界為 3.36 米的正方形是由 21 個相等的長方形所組成。
如果一個長方形的長是 28 厘米，那麼該長方形的周界是
 ? 厘米。

- 29) Emily throws a beanbag 15 m away to the right. She first walks [3.3%]
30 m forwards, then turns left and walks 15 m forwards. If the left
of Emily is pointing to the south-east, she is to the ? of the
beanbag.

小玲向右方 15 米拋出一個豆袋。她先向前行 30 米，然後轉向
她的左方再前行 15 米。如果最後小玲的左方是東南方，小玲
在豆袋的 ? 。

- A) east 東方 B) south-east 東南方
C) south 南方 D) south-west 西南方
E) west 西方 F) north-west 西北方
G) north 北方 H) north-east 東北方

- 30) N is a 3-digit number. It is divisible by 3, 6 and 8. What is the difference between the largest and smallest possible values of N ? [3.4%]

N 是一個三位數。它可以被 3、6 和 8 整除。 N 的最大和最小可能值之差是多少？

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- 31) From 1 to 2023, find the units digit of the product of all numbers with 3, 7 and 9 as their units digits. [4%]

由 1 至 2023，求所有個位值為 3、7 及 9 的數字之積的個位值。

- 32) Find the value of $15 \times 5400 - 1500 \times 44 + 1105 \times 9 - 11 \times 2092$. [4.1%]
求 $15 \times 5400 - 1500 \times 44 + 1105 \times 9 - 11 \times 2092$ 的值。

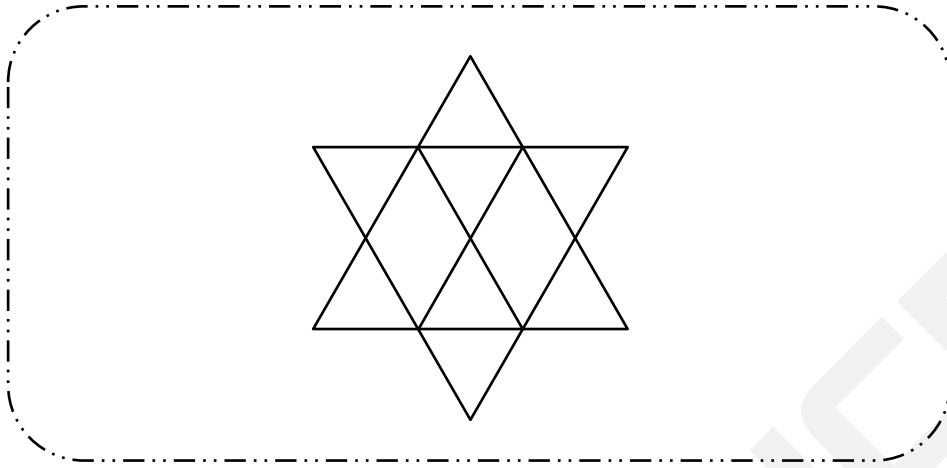
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- 33) Find the value of the 11th term of the following sequence. [4.2%]
求以下數列第 11 項的值。

500, 489, 476, 459, 440, 417, 388, ...

34) How many parallelograms are there in the figure below?

[4.3%]

下圖中共有多少個平行四邊形？



35) Find the value of $\frac{9+25+49+\dots+9801-2\times(3+5+7+\dots+99)}{198\times194+194\times190+190\times186+\dots+6\times2}$.

[4.4%]

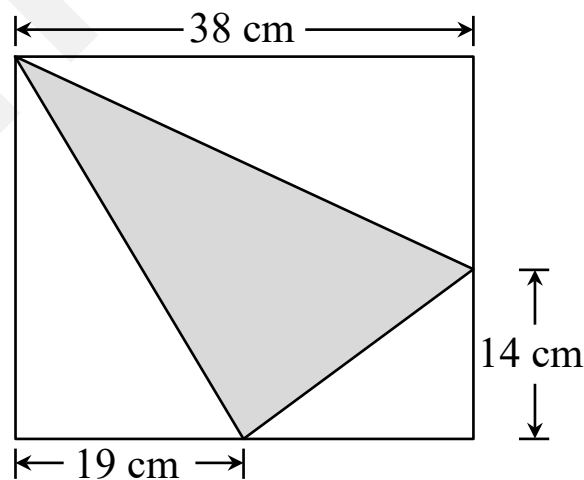
求 $\frac{9+25+49+\dots+9801-2\times(3+5+7+\dots+99)}{198\times194+194\times190+190\times186+\dots+6\times2}$ 的值。

- 36) In a deck of red, blue and green cards, there are 9 cards of each colour, numbered from 1 to 9. Choosing 2 cards from the deck, how many combinations are there such that the product of 2 numbers can be divisible by 6? [4.5%]

有一疊塗上紅色、藍色和綠色的卡牌。每種色有 9 張卡牌，各標示數字由 1 至 9。從中選出兩張卡牌，使兩個數字之積可被 6 整除的組合有多少個？

- 37) The figure below shows a rectangle, which has a triangle inside. If the area of the triangle is 456 cm^2 , the area of the rectangle is ? cm^2 . [4.6%]

下圖顯示了一個長方形，長方形內有一個三角形。如果三角形的面積是 456 平方厘米，長方形的面積是 ? 平方厘米。



- 38) The product of the Highest Common Factor and the Least Common Multiple of two numbers is 8379. If the Highest Common Factor of these two numbers is a 2-digit number, find the difference between these two numbers. [4.7%]

兩個數的最大公因數與最小公倍數之積是 8379。如果這兩個數的最大公因數是一個兩位數，求這兩個數之差。

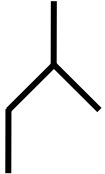
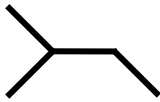
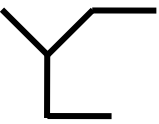
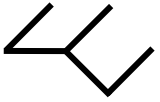
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- 39) N is a 3-digit even number. When N is divided by 3 and 7, the remainders are 1 and 4 respectively. What is the largest possible value of N ? [4.8%]

N 是一個三位雙數。當 N 除以 3 和 7 時，餘數分別為 1 和 4。
 N 的最大可能值是多少？

40) Draw the 5th figure.

[4.9%]

畫上第 5 個圖案。

1 st	2 nd	3 rd	4 th	5 th
				?

End of paper
全卷完



REG NO			P4
NAME			
GRADE			
SEAT			

ANSWER SHEET

IDCHECK

ABSENT

ANSWER		ANSWER		ANSWER		ANSWER	
1	540	11	366	21	$1\frac{1}{4} / \frac{5}{4}$	31	3
2	8	12	199	22	232	32	1933
3	11 368	13	$1\frac{14}{39}$	23	$12\frac{1}{16} / \frac{193}{16}$	33	236
4	32	14	$2\frac{5}{9}$	24	4	34	15
5	20 900	15	$5\frac{4}{11}$	25	360	35	$\frac{1}{4}$
6	4	16	79	26	3960	36	129
7	17 000	17	C, E, F	27	$69\frac{4}{5} / \frac{349}{5}$ /69.8(0)	37	1292
8	202	18	39	28	80	38	378
9	183	19	52	29	E. West 西方	39	970
10	24 000	20	156	30	864	40	

