



# MathConceptition

## 2018

# G4

# Question Booklet

# 問題簿

Name:

姓名：

Reg. No.:

考生編號：

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Time: 1 hour

Calculators are NOT permitted.

### Instructions:

1. DO NOT OPEN THIS QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.
2. Write your name and registration number on the cover of this question booklet.
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. If the information printed on your answer sheet is not correct, please inform the invigilator immediately.
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：1小時

不允許使用計算機。

### 考生須知：

1. 未宣布開始前，切勿翻閱此問題簿。
2. 請在此問題簿封面的適當位置寫上你的姓名及登記編號。
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. 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。
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)  $1824 + 4176 = ?$  [1%]
- 2)  $2018 - 1599 = ?$  [1%]
- 3)  $2 \times 3 \times 5 = ?$  [1%]
- 4)  $14 \times 9 = ?$  [1%]
- 5)  $80 \div 5 = ?$  [1%]
- 6)  $136 \div 8 = ?$  [1%]
- 7)  $34 \times 43 = ?$  [1%]
- 8)  $864 \div 32 = ?$  [1%]
- 9)  $72 \times 6 - 200 \div 5 = ?$  [1%]
- 10)  $9000 \div (162 - 29 \times 3) = ?$  [1%]
- 11)  $13 \times (40 + 333 \div 9) = ?$  [1%]
- 12)  $123 + 456 \div 36 \times 36 = ?$  [1%]

13) Evaluate  $\frac{6}{11} + \frac{10}{11} + \frac{7}{11}$ . (Express the answer in its simplest form.) [1%]

計算  $\frac{6}{11} + \frac{10}{11} + \frac{7}{11}$ 。(答案以最簡分數表示。)

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14) Evaluate  $5 - 3\frac{7}{10} + 2\frac{9}{10}$ . (Express the answer in its simplest form.) [1%]

計算  $5 - 3\frac{7}{10} + 2\frac{9}{10}$ 。(答案以最簡分數表示。)

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15) Evaluate  $\frac{11}{12} - \left(2\frac{1}{12} - 1\frac{11}{12}\right)$ . [1%]

(Express the answer in its simplest form.)

計算  $\frac{11}{12} - \left(2\frac{1}{12} - 1\frac{11}{12}\right)$ 。(答案以最簡分數表示。)

- 16) Ada's height is 173 cm, which is 47 cm shorter than Billy. If Billy's height is 4 times that of Carmen, how tall is Carmen in cm? [2.0%]

甲的身高是 173 厘米，比乙矮 47 厘米，而乙的身高是丙的 4 倍。問丙的身高是多少厘米？

- 
- 17) If Mary earns \$806 every day, how much does she earn in February 2018? [2.1%]

小美每天賺 806 元，那麼她在 2018 年 2 月共賺多少元？

- 
- 18) John can solve 27 math problems every day. How many days does he need to solve 1026 math problems? [2.2%]

小明每天做 27 題數學題，問他需要多少天才能完成 1026 題數學題？

- 19) John ate  $\frac{2}{9}$  of a pizza. He ate  $\frac{1}{9}$  of a pizza less than Mary. How much of the pizza did they eat altogether? [2.3%]

小明吃了  $\frac{2}{9}$  個薄餅，他比小美少吃  $\frac{1}{9}$  個薄餅。他們共吃了多少個薄餅？

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- 20) John has  $5\frac{3}{10}$  dollars and Mary has  $7\frac{9}{10}$  dollars. If they buy a cake which costs  $9\frac{7}{10}$  dollars, how much change should they get back? [2.4%]

小明有  $5\frac{3}{10}$  元，小美有  $7\frac{9}{10}$  元，他們合資購買一個價值  $9\frac{7}{10}$  元的蛋糕，問店員應找回多少元？

21) Find the sum of all the factors of 36. [2.5%]

36 的所有因數之和是多少？

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22) Find the Highest Common Factor of 144, 192 and 216. [2.6%]

求 144、192 和 216 的最大公因數。

23) Find the Lowest Common Multiple of 90 and 108. [2.7%]

求 90 和 108 的最小公倍數。

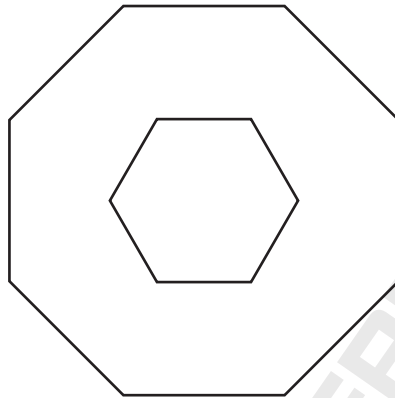
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24) Write  $\frac{3}{125}$  as a decimal. [2.8%]

把  $\frac{3}{125}$  寫成一個小數。

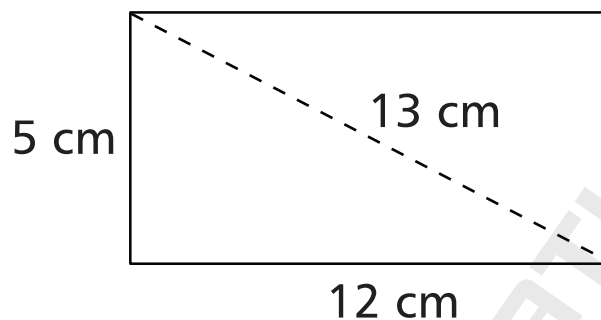
- 25) How many line(s) of symmetry is/are there in the figure below? [2.9%]

以下圖形有多少條對稱軸？



- 26) A piece of paper is cut into 2 pieces along the dashed line as shown below. The two pieces are then rearranged to form a triangle that has the longest perimeter. What is the perimeter of that triangle in centimetres? [3.0%]

在以下白紙沿虛線剪開，然後把兩個部分拼成一個周界最長的三角形。這個三角形的周界是多少厘米？



- 27) Find the sum of the three largest prime numbers within 100. [3.1%]

求 100 以內最大的三個質數之和。

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- 28) If the 6-digit number 57A428 is divisible by 9, find the value of A. [3.2%]

如果六位數 57A428 可以被 9 整除，求 A 的數值。

- 29) The perimeter of a rectangle is 40 cm. If its length is 3 times its width, what is the area of the rectangle in  $\text{cm}^2$ ? [3.3%]

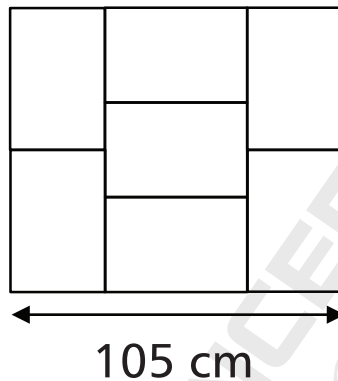
一個長方形的周界是 40 厘米。如果它的長是闊的 3 倍，那麼長方形的面積是多少平方厘米？

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- 30) If a 4-sided shape has four equal angles, then the shape must be a \_\_\_\_\_. [3.4%]

如果一個四邊形的四個角都相等，這個四邊形必定是\_\_\_\_\_形。

- 31) The figure below is formed by 7 identical small rectangles. Find the area of a small rectangle in  $\text{cm}^2$ . [4.0%]

以下圖形由 7 個相同的小長方形組成，問每個小長方形的面積是多少平方厘米？



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- 32) Evaluate  $77 \times 91 \times 143$ . [4.1%]

計算  $77 \times 91 \times 143$ 。

- 33) Mary makes 6 cakes every morning and eats 4 of them every midnight. In the afternoon of the  $N^{\text{th}}$  day, there are 36 cakes in Mary's home. Find N. [4.2%]

小美每天早上都會做 6 件蛋糕，然後在午夜時吃掉其中 4 件。在第  $N$  天中午的時候，小美的家中存放了 36 件蛋糕。求  $N$  的數值。

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- 34) John has some \$4 stamps and \$7 stamps. If he has 63 stamps which worth \$339 in total, how many \$7 stamps does he have? [4.3%]

小明有一些 4 元郵票和 7 元郵票。如果他總共有 63 個郵票，總值 339 元，問他有 7 元郵票多少個？

- 35) A road is 1 km long. Some trees are planted on both sides of the road including both ends such that every two neighbouring trees are 25 m apart. If 4 pots of flowers are planted between every two neighbouring trees, how many pots of flowers are planted? [4.4%]

一條公路長 1 公里，在兩旁每隔 25 米種 1 棵樹，兩端都種，每兩棵樹之間又種了 4 盆花，問總共種了多少盆花？

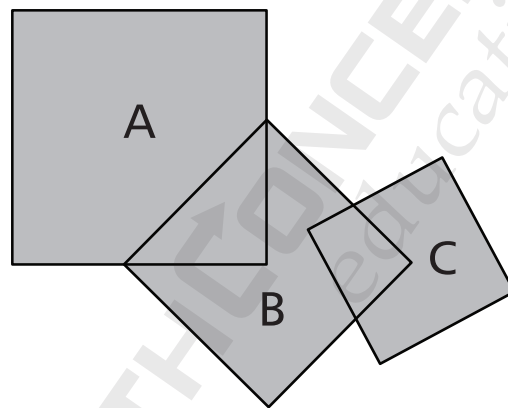
- 36) If each letter represents a different digit, then what 4-digit number does "ABCD" represent? [4.5%]

在下式中，各英文字母表示一個不同的數字。問「ABCD」代表哪一個四位數？

$$\begin{array}{r}
 \phantom{\times} \phantom{000} A \phantom{00} B \phantom{000} C \\
 \times \phantom{0000} \phantom{000} \phantom{000} A \\
 \hline
 3 \phantom{000} D \phantom{000} D \phantom{000} 2
 \end{array}$$

- 37) In the figure, A, B and C are squares with side lengths 10 cm, 8 cm and 6 cm respectively. One vertex of A is on the centre of B while one vertex of B is on the centre of C. What is the area of the shaded region in  $\text{cm}^2$ ? [4.6%]

圖中有 A、B、C 三個正方形，它們的邊長分別是 10 cm、8 cm 和 6 cm。A 的一個頂點在 B 的中心上，而 B 的一個頂點在 C 的中心上。問陰影部份的面積是多少平方厘米？



- 38) 3 boys and 4 girls are divided into 2 rows to take a photo. If the students in each row have to be the same gender, find the number of ways to arrange the students. [4.7%]

3 位男生和 4 位女生分成兩行拍大合照。如果每行都只可以有相同性別的學生，問總共有多少種排列的方法？

- 39) From 1 to 2018, how many numbers are multiples of 8 but not multiples of 18 or 20? [4.8%]

由 1 至 2018，有多少個數字是 8 的倍數，但不是 18 或 20 的倍數？

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- 40) If an integer can be written as the product of 4 different prime numbers, how many factors does it have? [4.9%]

如果一個整數可以寫成 4 個不同的質數之積，問這個整數共有因數多少個？



NAME	
GROUP	
SEAT	
REG No.	

ANSWER	MUO	ANSWER	MUO	ANSWER	MUO	ANSWER	MUO
1 ↓ 6000	1 ○	11 ↓ 1001	11 ○	21 ↓ 91	21 ○	31 ↓ 1350	31 ○
2 ↓ 419	2 ○	12 ↓ 579	12 ○	22 ↓ 24	22 ○	32 ↓ 1002001	32 ○
3 ↓ 30	3 ○	13 ↓ $2\frac{1}{11}$	13 ○	23 ↓ 540	23 ○	33 ↓ 16	33 ○
4 ↓ 126	4 ○	14 ↓ $4\frac{1}{5}$	14 ○	24 ↓ 0.024	24 ○	34 ↓ 29	34 ○
5 ↓ 16	5 ○	15 ↓ $\frac{3}{4}$	15 ○	25 ↓ 2	25 ○	35 ↓ 320	35 ○
6 ↓ 17	6 ○	16 ↓ 55	16 ○	26 ↓ 50	26 ○	36 ↓ 6478	36 ○
7 ↓ 1462	7 ○	17 ↓ 22568	17 ○	27 ↓ 269	27 ○	37 ↓ 175	37 ○
8 ↓ 27	8 ○	18 ↓ 38	18 ○	28 ↓ 1	28 ○	38 ↓ 288	38 ○
9 ↓ 392	9 ○	19 ↓ $\frac{5}{9}$	19 ○	29 ↓ 75	29 ○	39 ↓ 179	39 ○
10 ↓ 120	10 ○	20 ↓ $3\frac{1}{2}$	20 ○	30 ↓ 長方 Rectangle	30 ○	40 ↓ 16	40 ○