



MathConceptition

2023

P1

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) $11 + 3 = ?$ [1%]
- 2) $12 + 6 = ?$ [1%]
- 3) $18 + 17 = ?$ [1%]
- 4) $20 - 19 = ?$ [1%]
- 5) $16 - 9 = ?$ [1%]
- 6) $6 + 7 + 15 = ?$ [1%]
- 7) $3 + 16 + 9 = ?$ [1%]
- 8) $2 + 7 + 18 = ?$ [1%]
- 9) $48 - 14 - 5 = ?$ [1%]
- 10) $27 - 13 - 6 = ?$ [1%]
- 11) $34 - 16 - 8 = ?$ [1%]
- 12) $16 + 16 - 17 = ?$ [1%]
- 13) $15 + 36 - 22 = ?$ [1%]
- 14) $35 - 16 + 2 = ?$ [1%]
- 15) $53 - 23 + 10 - 25 = ?$ [1%]

- 16) Find the missing number in the pattern.

[2%]

根據規律，找出橫線上的數字。

23, ?, 17, 14, 11, 8, 5, ...

-
- 17) Find the missing number.

[2.1%]

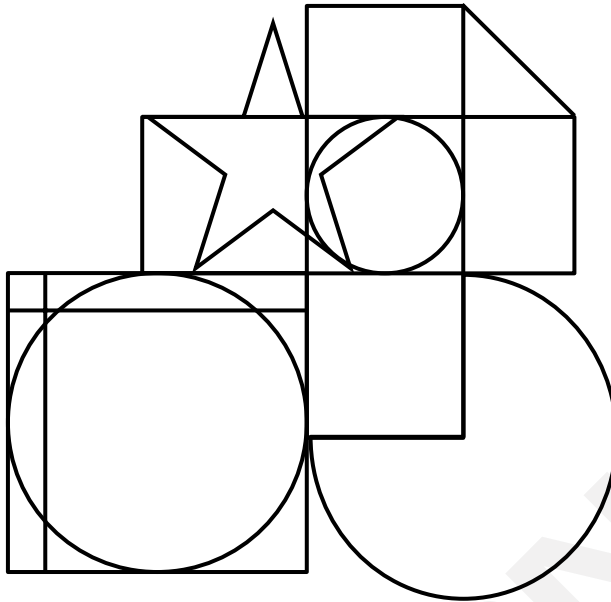
找出橫線上的數字。

$56 - 8 = \underline{\quad ? \quad} - 12$

- 18) How many circles are there in the figure below?

[2.2%]

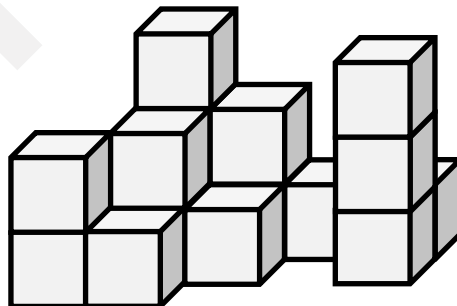
下圖共有多少個圓形？



- 19) At least how many  are needed to build the solid below?

[2.3%]

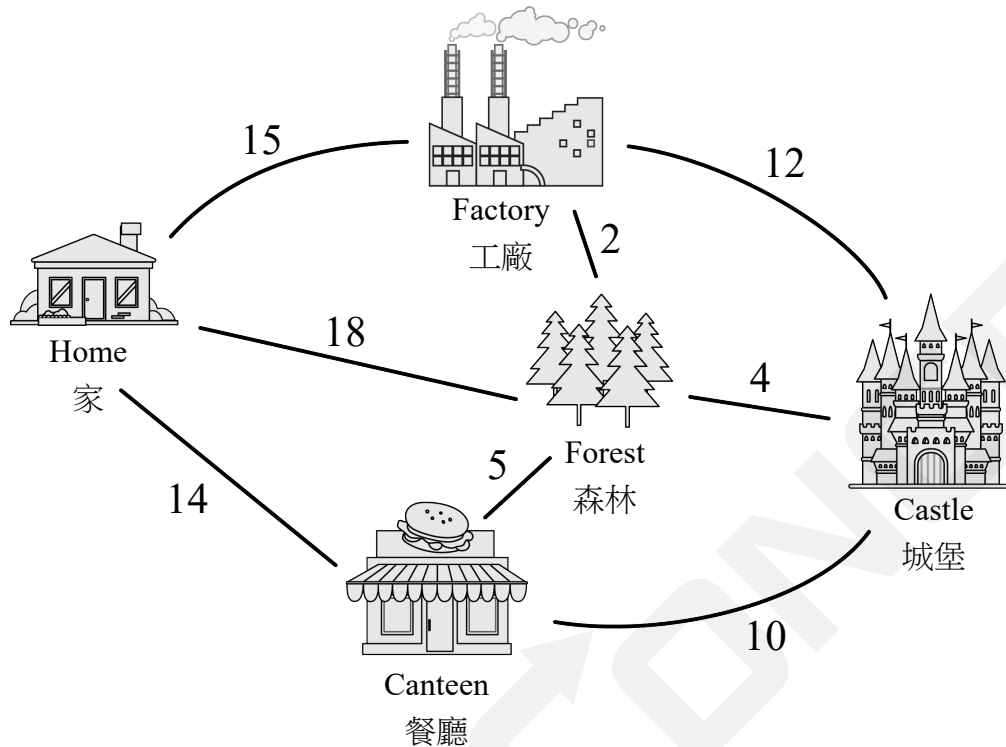
要砌出以下立體最少需要  多少粒？



- 20) Find the length of the shortest path from Home to Castle.

[2.4%]

求從家到城堡的最短路徑的長度。



- 21) Fill in “+” or “-” in each box to make the calculation valid.

[2.5%]

(Write only the symbols in a correct order on the answer sheet)

在方格中填寫「+」或「-」，使算式成立。

(只需將符號順次序寫在答案紙)

$$3 \quad \boxed{} \quad 6 \quad \boxed{} \quad 7 \quad \boxed{} \quad 4 \quad = \quad 0$$

- 22) If each ☺ and ◇ represents a number, ◇ = _____. [2.6%]

如果 ☺ 及 ◇ 各代表一個數字，◇ = _____。

$$\text{☺} + 4 = 11$$

$$\text{☺} - \text{◇} = 4$$

-
- 23) A bakery had 32 croissants originally. After selling 15 croissants in the morning, the baker made 12 more. Then, the shop staff ate some of them and there are 14 croissants left. How many croissants did the staff eat? [2.7%]

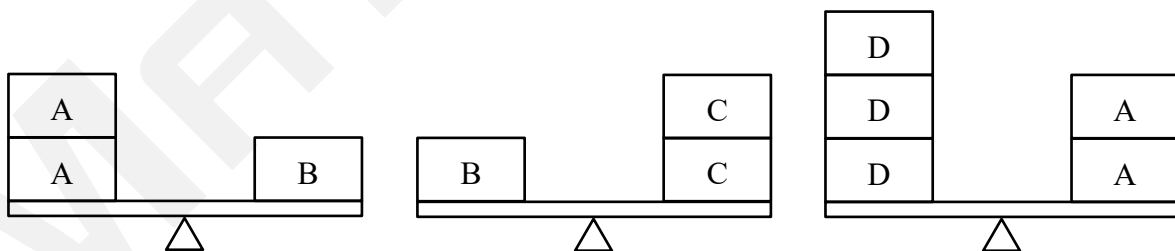
一家麵包店原有 32 個牛角包。早上賣了 15 個牛角包後，麵包師傅又多做了 12 個。然後，店員們吃了其中一些，剩下 14 個牛角包。店員們吃了多少個牛角包？

- 24) A teacher is assigning his students into groups. The first student goes to group 1, the second goes to group 2, the third goes to group 3, the fourth goes to group 1, the fifth goes to group 2, the sixth goes to group 3, and so on. Which group does the 28th student go to? [2.8%]

老師正為他的學生分組。第一個學生分到第 1 組，第二個分到第 2 組，第三個分到第 3 組，第四個分到第 1 組，第五個分到第 2 組，第六個分到 3 組，依此類推。第 28 個學生被分配到哪一組？

- 25) Which of the following boxes is the lightest? Write down the letter only. [2.9%]

以下哪個箱子最輕？只需寫下所代表的字母。



- 26) How many even numbers are there from 11 to 59? [3%]

11 至 59 中，共有多少個雙數？

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- 27) The sum of five different numbers is 60. If all five numbers are greater than 0, find the largest possible number among these five numbers. [3.1%]

五個不同的數字之和為 60。如果它們都大於 0，求五個數字中最大的數字。

- 28) Johnny is on the 13th floor of a building and he wants to go to the 5th floor. If there are 11 stairsteps between each floor, how many stairsteps does he have to walk? [3.2%]

阿強在大廈的 13 樓，他想走到 5 樓。如果每層之間有 11 級樓梯，他一共要走多少級樓梯？

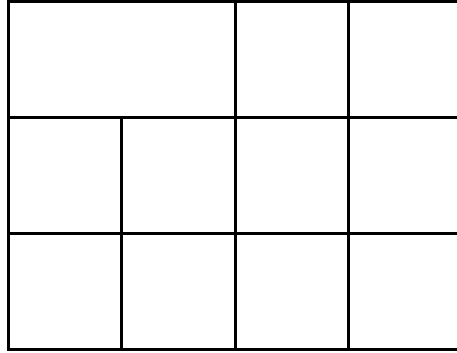
-
- 29) Bobby is queuing for fried chicken. There are 8 people behind him and 13 people in front of him. 5 people have just left, how many people are there in the queue now? [3.3%]

小強在排隊買炸雞，已知有 8 個人排在他後面，13 個人排在他前面。5 個人離開隊伍後，現在一共有多少人在排隊？

30) How many squares are there in the below figure?

[3.4%]

下圖中共有多少個正方形？



31) 25th February, 2020 is a Tuesday. Which day of the week is 2nd March, 2020?

[4%]

2020 年 2 月 25 日是星期二。2020 年 3 月 2 日是星期幾？

- 32) 20 years later, Katy will be 27 years old. Her brother is 2 years younger than her. What was the sum of their ages 3 years ago? [4.1%]

嘉嘉 20 年後是 27 歲。她的弟弟比她小 2 歲。3 年前，他們的歲數之和是多少？

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- 33) In a boardgame, there are 50 black pieces and 50 white pieces. In each round, replace 5 white pieces by black pieces. If there are still white pieces on the checkerboard, replace 2 black pieces by white pieces. How many rounds are needed to turn all pieces into black? [4.2%]

黑棋有 50 枚，白棋有 50 枚。每個回合中，5 枚白棋會先變成黑棋。若棋盤上仍有剩餘的白棋，2 枚黑棋則會變成白棋。那麼把棋盤上所有的棋子變成黑棋需要多少個回合？

- 34) Bobby's clock rings every 20 minutes. It rings for the first time at 7 a.m.. How many times does it ring from 7 a.m. to 11 a.m.? [4.3%]

小強的時鐘每 20 分鐘響鬧 1 次。上午七時正會響鬧第 1 次。
由上午七時正到上午十一時正共響鬧了多少次？

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- 35) What is the units digit of $2 + 4 + 6 + 8 + \cdots + 74 + 76$? [4.4%]

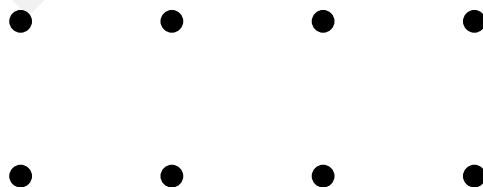
$2 + 4 + 6 + 8 + \cdots + 74 + 76$ 的個位是多少？

- 36) Thomas has 105 chocolates. He eats 3 chocolates on the first day and 4 chocolates on the second day. In each of the following days, the number of chocolates he eats is the sum of the number of chocolates eaten in the previous two days. How many days will Thomas take to eat all the chocolates? [4.5%]

小耀有 105 粒巧克力。他第一天會吃 3 粒巧克力，第二天會吃 4 粒巧克力，之後每一天吃的巧克力數量都是前 2 日數量之和。小耀需要多少天才能把所有的巧克力吃完？

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- 37) Choose three points to form a triangle, how many triangles can be drawn from the points in the figure? [4.6%]

利用三點連成一個三角形，圖中的點最多可以畫出多少個三角形？



- 38) Andy and 4 other children form a queue. If Andy is always the third [4.7%]
person in the queue, how many different ways can they line up?

小明和 4 個小孩在排隊，如果小明總是排在第三位，他們共有多少種不同的排列方法？

- 39) Find the missing number in the pattern. [4.8%]

根據規律，找出橫線上的數字。

$$5 \odot 1 = 6$$

$$4 \odot 2 = 10$$

$$3 \odot 4 = 16$$

$$8 \odot 3 \odot 2 = 27 \odot 2 = 56$$

$$2 \odot 5 \odot 10 = \underline{\quad ? \quad}$$

- 40) In a town, there are only 2 types of residents: those who only tell the truth and those who only tell lies. 150 residents fill out a questionnaire. Below are the results of the questionnaire. [4.9%]
How many residents always lie?

某鎮只有 2 種居民：只說真話的人和只說謊的人。150 名居民完成了一份問卷，以下為問卷所得出的結果。
只說謊的居民有多少人？

Question 問題	Number of answer "Yes" 回答「是」的數目
Are you under 18 years old? 你是否不足 18 歲？	68
Are you between 18 – 35 years old? 你是否 18 – 35 歲？	45
Are you between 36 – 65 years old? 你是否 36 – 65 歲？	52
Do you have kids? 你是否有小孩？	72
Are you over 65 years old? 你是否超過 65 歲？	75

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ANSWER SHEET

REG NO			P1
NAME			
GRADE			
SEAT			

☐ IDCHECK

☐ ABSENT

ANSWER		ANSWER		ANSWER		ANSWER	
1	14	11	10	21	-- ++	31	星期一 Monday
2	18	12	15	22	3	32	6
3	35	13	29	23	15	33	16
4	1	14	21	24	1	34	13
5	7	15	15	25	D	35	2
6	28	16	20	26	24	36	7
7	28	17	60	27	50	37	48
8	27	18	2	28	88	38	24
9	29	19	16	29	17	39	160
10	8	20	21	30	16	40	45

