

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

- 1) 求以下算式的值。
Find the value of the following expression.
 $14 \times 37 + (312 \div 6 - 98)$

- 2) 狂牛隊在已賽的 48 場比賽中獲勝了 37 場。為了要使得在本年度中達到 80% 以上的得勝率，請問在剩下的 34 場比賽中，球隊必須最少再贏多少場賽事？
Bull Team has already won 37 games out of 48 games played. In order to achieve a winning rate of 80% above this year, in the remaining 34 games, how many games at least must the team win?

- 3) 一個袋子中有 9 個不同的球，從中抽出 5 個，並把它們排成一列，問有多少種不同的方法？（次序不同的也視作不同的方法）
There are 9 different balls in a bag. Find the number of way(s) to pick 5 balls from the bag and arranged them in a row. (Different orders are considered different ways)

- 4) 求以下算式的值。（如有需要，請以循環小數作答）
Find the value of the following expression. (Express the answer as recurring decimal if necessary)
 $0.\dot{1}3\dot{9} + 0.\dot{5}\dot{8} - 0.\dot{7}0\dot{5}$

- 5) 求以下算式的值。
Find the value of the following expression.
 $2017^2 - 2016^2 + 2015^2 - 2014^2 + \dots + 1003^2 - 1002^2$

- 6) 已知 a 、 b 和 c 都是正整數，並且 $a + b + c = 35$ 。求 $a \times b \times c$ 的最大值。
Given that a , b , and c are positive integers and $a + b + c = 35$. Find the largest value of $a \times b \times c$.

- 7) 某三位自然數除以 6 餘 4，除以 14 餘 12，求該數的最大值。
When a three-digit number is divided by 6, the remainder is 4. When it is divided by 14, the remainder is 12. Find the largest value of the number.

- 8) 在任何 2017 個人中，可以保證有最少 n 人的生日是同一天，求 n 的最大值。
Among any 2017 people, it is assured that at least n people have their birthdays on the same day. Find the largest value of n .

~ 甲部完 ~
~ End of Section A ~

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乙部：每題 5 分

Section B – each question carries 5 marks

- 9) 一個長、闊及高分別為 209 厘米、133 厘米、247 厘米的長方體，若將這個長方體分割成相同的正方體，則最少可以分多少個？
The length, the width and the height of a cuboid are 209 cm, 133 cm and 247 cm respectively. If the cuboid is cut into identical cubes, how many cubes at least can be obtained?
- 10) 姊姊和弟弟原有的圖書之比是 3:10 後來弟弟買來了 52 本圖書 姊姊和弟弟的圖書之比變成 2:11，弟弟現有多少本圖書？
The ratio between the numbers of books a sister and a brother had was 3:10. The brother bought 52 books, then the ratio between the numbers of books the sister and the brother have becomes 2:11. How many books does the brother have now?
- 11) 求以下算式的值。
Find the value of the following expression.
 $6^2 + 12^2 + 18^2 + \dots + 198^2$
- 12) 把 7 個字母 P、Q、R、S、T、U 和 V 排成一排，如果要求 P 和 Q 兩個字母分開，有多少種不同的排列？
Seven letters, P, Q, R, S, T, U and V, are arranged in a row. If it is required that P and Q are to be separated, how many way(s) of arrangement are there?
- 13) C 地位於 A 地和 B 地之間，地勢較高。由 A 地到 C 地是上坡路，由 C 地到 B 地是下坡路。一輛越野車上坡時每小時行駛 27 公里，下坡時每小時行駛 54 公里，而該越野車從 A 地經 C 地到 B 地需要 18 小時，從 B 地經 C 地回到 A 地則要 12 小時。A 地與 C 地距離多少公里？
Location C is between Location A and Location B, situated at higher level. From A to C is an uphill road, from C to B a downhill road. An SUV travels 27 kilometres per hour when it goes uphill; 54 kilometres per hour when it goes downhill. The SUV takes 18 hours to travel from A to B via C; 12 hours to travel back from B to A via C. What is the distance between A and C in kilometres?
- 14) 現在是 10 點，再過多少分鐘，時針與分針將第一次在一條直線上？
It is now 10 o'clock. How many minutes later will the hours hand and the minutes hand be on a straight line for the first time?
- 15) 甲、乙兩車從 A、B 兩地同時相向出發，甲車每小時行 56 公里，乙車每小時行 48 公里。兩車在距離中點 32 公里處相遇。A、B 兩地相距多少公里？
Cars P and Q set off from Locations A and B towards each other. Car P travels at 56 kilometres per hour. Car Q travels at 48 kilometers per hour. Two cars meet at a place 32 kilometres apart from the mid-point. What is the distance between Location A and B in kilometres?
- 16) 設一四位數為 \overline{ABCD} 。 \overline{ABCD} 乘以 9 之後變了另一四位數 \overline{DCBA} ，求這個四位數 \overline{ABCD} 。
Let a four-digit number be \overline{ABCD} . When \overline{ABCD} is multiplied by 9, it becomes another four-digit number \overline{DCBA} . Find the four-digit number \overline{ABCD} .

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.

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~ 乙部完 ~

~ End of Section B ~

丙部：每題 7 分

Section C – each question carries 7 marks

- 17) 有 8 個分別裝有 12、14、20、23、24、31、36 和 42 顆糖果的袋子，若小明取走若干袋，小強也取走若干袋，最後剩下一袋，已知小明取走的糖果總數是小強的兩倍，那麼剩下的一袋糖果有多少顆？

8 bags contain 12, 14, 20, 23, 24, 31, 36 and 42 candies respectively. If Mickey takes away several bags and Kenny also takes away several bags, one bag is left. Given that the number of candies Mickey takes away is twice of that of Kenny does, how many candies does the remaining bag have?

- 18) 一項工程，甲、乙、丙三人合作需要 10 天完成。如果丙少工作 2 天，乙就要多做 4 天，或者由甲、乙兩人合作多做 1 天。問這項工程由甲單獨做需要多少天？

A project takes 10 days to be finished by A, B and C together. If C works 2 days fewer, then B needs to work 4 days more or A and B need to work together for an extra day. How many days does it take to be finished if it is solely done by A?

- 19) 明心、澄心及詠心三人步行從學校去體育館看比賽。明心及澄心在下午 4 時正同時從學校出發，明心每分鐘走 70 米；澄心每分鐘走 64 米。詠心在下午 4 時 5 分才從學校出發。最後在下午 4 時 40 分時，明心及詠心同時到達太空館。問詠心何時追上澄心？

Ming, Ching and Wing walked from school to a gym to watch a match. Ming and Ching set off from school at 4 o'clock in the afternoon. Ming and Ching walks 70 and 64 metres per minute respectively. Wing set off at 4:05. Ming and Wing arrived the gym at 4:40. At what time did Wing chase up Ching?

- 20) P、Q、R、S、T 五人當中，其中 2 人來自真話國，他們從不說謊，另外 3 人來自大話國，他們則有時說謊、有時不會說謊。以下是他們的對話：

句子(1) P：「Q 來自真話國！」

句子(2) Q：「R 來自大話國！」

句子(3) S：「句子(2)是錯的！」

句子(4) P：「句子(3)說的對！」

句子(5) R：「T 來自大話國！」

句子(6) S：「句子(5)是錯的！」

請問來自大話國的是哪三位？

Among 5 people, P, Q, R, S and T, 2 people are from Truth Kingdom and they never lie. The other 3 people are from Lie Kingdom. They sometimes lie and sometimes do not. Below is their conversation:

Statement (1) P: "Q comes from Truth Kingdom!"

Statement (2) Q: "R comes from Lie Kingdom!"

Statement (3) S: "Statement (2) is wrong!"

Statement (4) P: "Statement (3) is right!"

Statement (5) R: "T comes from Lie Kingdom!"

Statement (6) S: "Statement (5) is wrong!"

Which 3 people come from Lie Kingdom?

~ 全卷完 ~

~ End of Paper ~