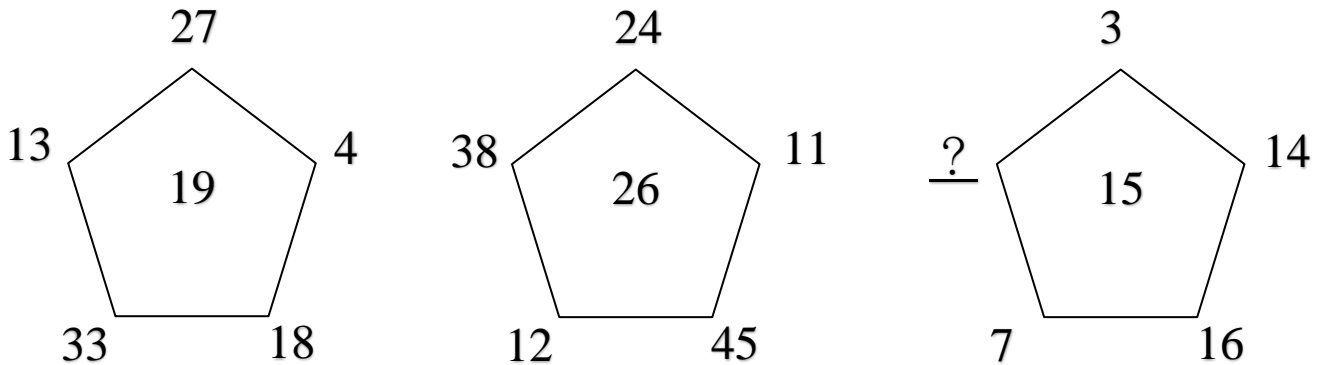


填空題 (第 1 至 25 題) (每題 4 分 · 答錯及空題不扣分)

Logical Thinking

1. Sophia now has a few candies. If the number of candies plus 21, then is divided by 16, and then is multiplied by 33 and minuses 19. The result will be 113. How many candies does Sophia have?
Sophia sekarang memiliki beberapa permen. Jika jumlah permen ditambah 21, kemudian dibagi 16, lalu dikalikan dengan 33 dan dikurangi 19. Hasilnya adalah 113. Berapa banyak permen yang dimiliki Sophia?
2. According to the pattern shown below, what is the number in the space provided?
Berdasarkan pola di bawah ini, berapakah bilangan pada tempat yang tersedia?



Question 2

3. It takes Harry 14 minutes to finish an exercise. He has to take a 8-minute break after every exercise and then he continues to finish another exercise. How many minute(s) does he need to finish 5 exercises?
Harry membutuhkan waktu 14 menit untuk menyelesaikan sebuah latihan. Dia harus istirahat 8 menit setelah setiap latihan dan kemudian dia melanjutkan untuk menyelesaikan latihan lain. Berapa menit yang dia butuhkan untuk menyelesaikan 5 latihan?
4. Today is 15th June, Tuesday. Which day of the week is 3rd November?
Hari ini tanggal 15 Juni, Selasa. Hari apa dalam seminggu adalah 3 November?
5. Given there are 6 different grades, at least how many student(s) is / are there such that at least 20 of them are in the same grade?
Mengingat ada 6 kelas yang berbeda, paling sedikit ada berapa siswa/ada sehingga paling sedikit 20 dari mereka berada di kelas yang sama?

請以最簡形式填寫答案 · 若計算結果是分數 · 請確保為真分數或帶分數 · 或將計算結果寫成小數 · 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. 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.

Arithmetic

6. Using the method of $S = \frac{3S - S}{2}$, find the value of $6 + 18 + 54 + 162 + \dots + 1458$.

Dengan menggunakan metode $S = \frac{3S - S}{2}$, Temukan nilai dari $6 + 18 + 54 + 162 + \dots + 1458$.

7. Find the value of $\left(\frac{11}{2} + \frac{11}{5} + \frac{11}{6}\right) \div \left(\frac{1}{1} + \frac{1}{5} + \frac{1}{6} + \frac{1}{10}\right)$.

Temukan nilai dari $\left(\frac{11}{2} + \frac{11}{5} + \frac{11}{6}\right) \div \left(\frac{1}{1} + \frac{1}{5} + \frac{1}{6} + \frac{1}{10}\right)$.

8. Find the value of $(19 \times 20 \times 21 - 1197) \div 17$.

Temukan nilai dari $(19 \times 20 \times 21 - 1197) \div 17$.

9. Find the value of $\frac{7}{7 \times 10} + \frac{7}{10 \times 13} + \dots + \frac{7}{49 \times 52} + \frac{7}{52 \times 55}$.

Temukan nilai dari $\frac{7}{7 \times 10} + \frac{7}{10 \times 13} + \dots + \frac{7}{49 \times 52} + \frac{7}{52 \times 55}$.

10. Find the value of $8 + 17 + 26 + \dots + 125 + 134$.

Temukan nilai dari $8 + 17 + 26 + \dots + 125 + 134$.

請以最簡形式填寫答案，若計算結果是分數，請確保為真分數或帶分數，或將計算結果寫成小數。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. 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.

Number Theory

11. Find the unit digit of A if $A = \underbrace{1022 \times 1022 \times \dots \times 1022}_{1022\text{'s}} \times 7 \times 17 \times 27 \times \dots \times 1017$.

Temukan angka satuan dari A jika $A = \underbrace{1022 \times 1022 \times \dots \times 1022}_{1022\text{'s}} \times 7 \times 17 \times 27 \times \dots \times 1017$.

12. Define the operation symbol $a \otimes b = \frac{(a+b)(b+3)}{a-2b+ab}$, find the value of $2 \otimes (3 \otimes 6)$.

Didefinisikan operasi $a \otimes b = \frac{(a+b)(b+3)}{a-2b+ab}$, temukan nilai dari $2 \otimes (3 \otimes 6)$.

13. If a 11-digit number $\overline{2022A3068B8}$ is divisible by 36, find the sum of all possible value(s) of A .

Jika bilangan 11 digit $\overline{2022A3068B8}$ habis dibagi 36, temukan jumlah semua kemungkinan dari A .

14. The sum of 9 consecutive odd numbers is 855. Find the value of the second smallest number.

Jumlah dari 9 bilangan ganjil berurutan adalah 855. Temukan bilangan terkecil keduanya.

15. There are x peaches and y lemons. The product of integers x and y is 972. The number of peaches is 12 times of that of lemons. How many peach(es) is / are there?

Ada x buah persik dan y lemon. Hasil kali bilangan bulat x dan y adalah 972. Jumlah buah persik adalah 12 kali jumlah lemon. Ada berapa buah persik / ada?

請以最簡形式填寫答案，若計算結果是分數，請確保為真分數或帶分數，或將計算結果寫成小數。錯誤單位將不給予任何分數。

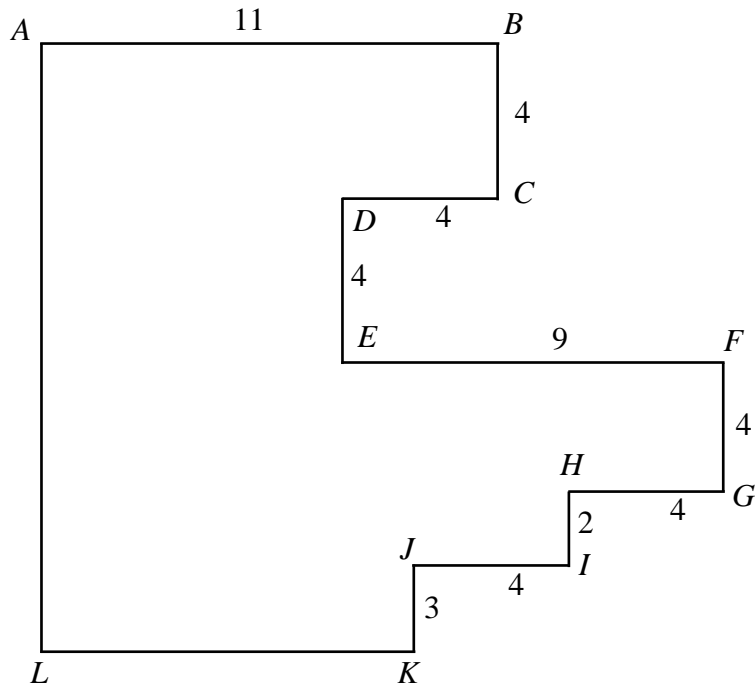
Write down the answer in the simplest form. If the calculation result is a fraction, please write down the answer as a proper or mixed fraction, decimal figure is also accepted. Marks will NOT be given for incorrect unit.

請將答案寫在 答題紙 上。

All answers should be written on the ANSWER SHEET.

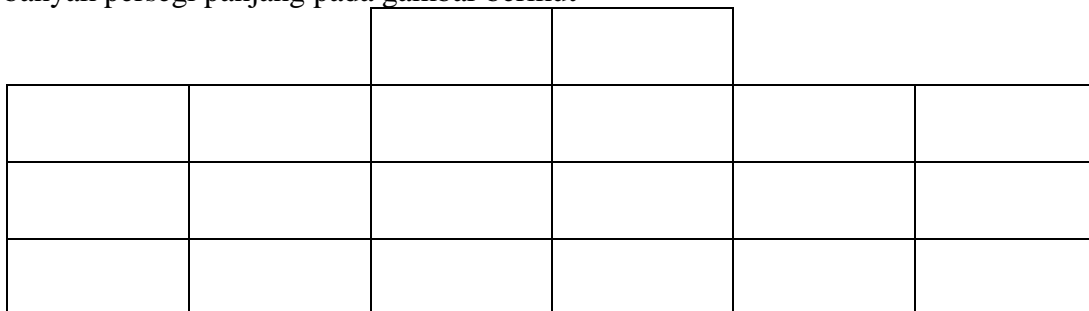
Geometry

16. The figure below is a polygon $ABCDEFGHIJKL$. It is given that $AB = 11$, $BC = CD = DE = FG = GH = IJ = 4$, $EF = 9$, $HI = 2$ and $JK = 3$. Find the area of this polygon.
 Pada gambar segibanyak $ABCDEFGHIJKL$. Diketahui $AB = 11$, $BC = CD = DE = FG = GH = IJ = 4$, $EF = 9$, $HI = 2$ dan $JK = 3$. Carilah luas dari segibanyak ini.



Question 16

17. How many rectangle(s) is / are there in the figure below?
 Berapa banyak persegi panjang pada gambar berikut



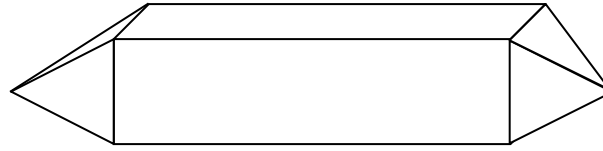
Question 17

18. Refer to the following figure, the figure is formed by connecting 2 identical pyramids and 1 cuboid. The bases of the pyramid and the cuboid are the same. The length, width and height of the cuboid are 7, 7 and 11 respectively. The height of the pyramid is 6. Find the volume of the figure.
Perhatikan gambar berikut, bangun tersebut dibentuk dengan menghubungkan 2 piramida identik dan 1 balok. Alas piramida dan balok adalah sama. Panjang, lebar, dan tinggi balok berturut-turut adalah 7, 7 dan 11. Tinggi piramida adalah 6. Tentukan volume bangun tersebut.

請以最簡形式填寫答案。若計算結果是分數，請確保為真分數或帶分數，或將計算結果寫成小數。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. Marks will NOT be given for incorrect unit.

請將答案寫在 答題紙 上。

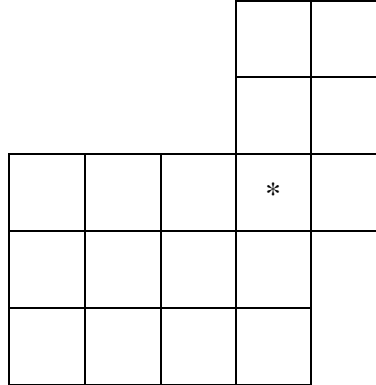
All answers should be written on the ANSWER SHEET.



Question 18

19. How many rectangle(s) with “*” is / are there in the figure below?

Berapa banyak persegi panjang yang memuat “*” pada gambar berikut?



Question 19

20. The area of a rectangle is 1176. If the sides of the rectangle are integers, how many different value(s) of the perimeter of this rectangle is / are there?

Luas sebuah persegi panjang adalah 1176. Jika sisi-sisi persegi panjang adalah bilangan bulat, berapa banyak nilai yang berbeda dari keliling persegi panjang?

請以最簡形式填寫答案，若計算結果是分數，請確保為真分數或帶分數，或將計算結果寫成小數。錯誤單位將不給予任何分數。

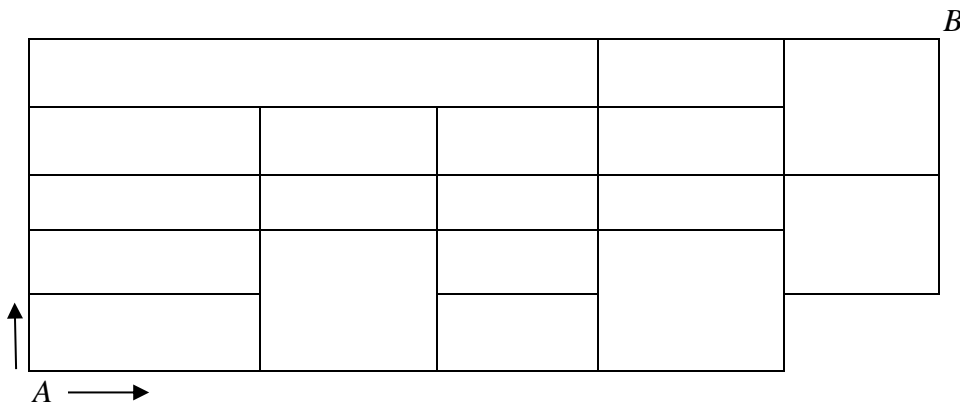
Write down the answer in the simplest form. If the calculation result is a fraction, please write down the answer as a proper or mixed fraction, decimal figure is also accepted. Marks will NOT be given for incorrect unit.

請將答案寫在 答題紙 上。

All answers should be written on the ANSWER SHEET.

Combinatorics

21. Choose 3 digits, without repetition, from 1, 2, 3, 6, 7 to form 3-digit numbers. How many number(s) can be divisible by 6?
Pilih 3 digit, tanpa pengulangan, dari 1, 2, 3, 6, 7 untuk membentuk bilangan 3 digit. Berapa banyak bilangan yang dapat dibagi 6?
22. In how many ways can the letters in the word “PREMIUM” be arranged if the arrangement begins and ends with “M”?
Berapa cara menyusun huruf pada kata “PREMIUM” jika susunannya diawali dan diakhiri dengan huruf “M”?
23. If Daniel goes from point A to point B, each step can only move up or move right. How many way(s) is / are there?
Jika Daniel pergi dari titik A ke titik B, setiap langkah hanya bisa bergerak ke atas atau ke kanan. Ada berapa cara/ada?



Question 23

24. Numbers are drawn from the 110 integers 22 to 131. At least how many number(s) do we need to draw to ensure that there are two numbers whose sum is 94?
Beberapa bilangan diambil dari 110 bilangan bulat 22 sampai 131. Setidaknya berapa banyak bilangan yang harus kita ambil untuk memastikan bahwa ada dua bilangan yang jumlahnya 94?
25. If we construct two 4-digit numbers by using 8 digits 2, 2, 3, 4, 6, 7, 7, 9 without repetition, what is the smallest difference of these two 4-digit numbers?
Jika kita membuat dua bilangan 4 angka dengan menggunakan 8 angka 2, 2, 3, 4, 6, 7, 7, 9 tanpa pengulangan, berapakah selisih terkecil dari kedua bilangan 4 angka tersebut?

~ 全卷完 ~

~ End of Paper ~