

2020
香港 **數學盃**
Hong Kong Mathematics Cup 2020
全港綜合數學能力大賽



P3

問題簿

Question
Booklet

| | | | | | | |
|------------------------|---|--|--|--|--|--|
| 姓名 Name : _____ | 參賽者編號 Reg No : <table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table> | | | | | |
| | | | | | | |

限時：40分鐘

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參賽者編號。
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. 問題簿的附圖不一定依比例繪成。

Time : 40 minutes

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.

Part 1 Calculation 運算題

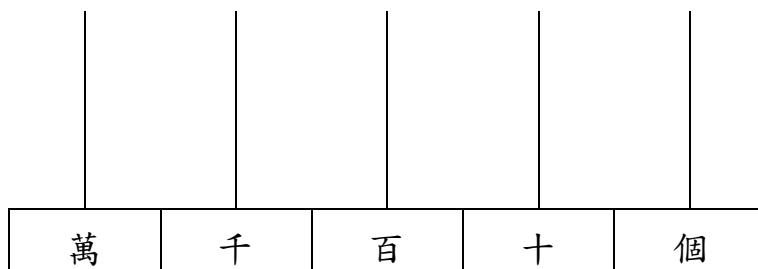
1. $1235 - 4838 + 3765 = ?$ [2 marks]
2. $99 \times 7 = ?$ [2 marks]
3. $16 \times 3 + 16 \times 6 + 34 \times 9 = ?$ [2 marks]
4. $7 \times (450 - 225) = ?$ [2 marks]
5. $3 \text{ L } 25 \text{ mL} - 160 \text{ mL} = \underline{\quad} \text{?} \underline{\quad} \text{ mL}$ [2 marks]
6. $3220 - 8 \times 45$ [2 marks]
7. $2019 \times 1 - 2018 \times 0 = ?$ [2 marks]
8. $17256 \div 4 = ?$ [2 marks]

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Part 2 Fundamental Questions 基礎題

9. Put 14 beads on the abacus to form the smallest 5-digit even number. What is this number?
- 用 14 粒算珠組成最小的五位雙數。這個數字是甚麼？ [3 marks]

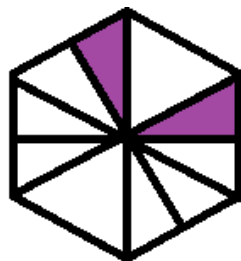


10. How many multiples of 3 are there between 100 and 1000?
- 在 100 到 1000 之間有多少個數是 3 的倍數？ [3 marks]
11. When calculating $175 + 245 - 125$, Lily writes all the 2 as 8. What is the difference between her answer and the correct answer?
- 妮妮在計算 $175 + 245 - 125$ 時，不小心把所有 2 寫成 8，她所求得的答案和正確答案相差多少？ [3 marks]

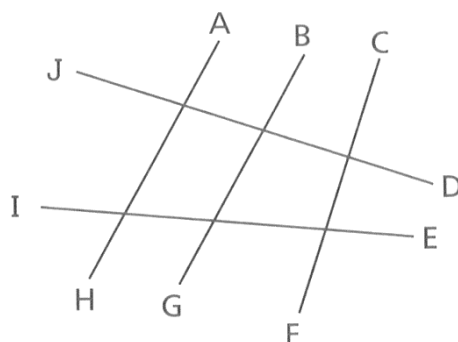
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12. What fraction of the figure below is shaded? 着色部分佔全圖的幾分之幾? [3 marks]
- shaded?



13. In the figure, which line segment is perpendicular to JD? 圖中，線段 JD 與哪一條線垂直? [3 marks]
- perpendicular to?

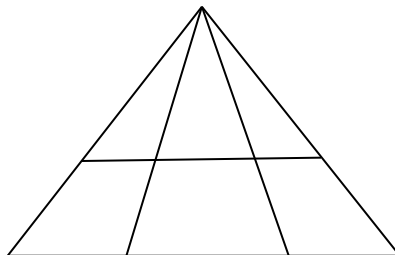






14. When a 3-digit number $4\star7$ divided by 9, there is no remainder. Find the value of \star . 當三位數 $4\star7$ 除以 9 時，沒有餘數。求 \star 的值。 [3 marks]

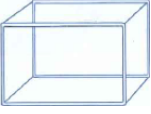


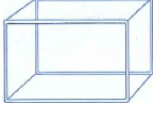


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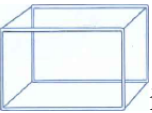
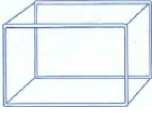


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15. How many triangles are there in the figure below? 下圖中共有三角形多少個? [3 marks]



16. One  can fill five  completely. 一個盛滿水的  可裝滿五個  。 [3 marks]

One  can fill two  and one  completely. 一個盛滿水的  可裝滿二個  及一個  。

If the capacity of  is 3500 mL, 若  的容量是 3500 毫升，
 what is the capacity of  in mL?  的容量是多少毫升?

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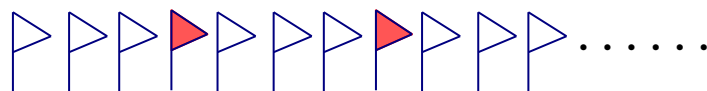
17. Macy has 80 biscuits, $\frac{3}{4}$ of them are peanut flavor, the rest are orange flavor. Macy eats 5 orange biscuits, then she share $\frac{1}{5}$ of the remaining orange biscuits to her brother. How many orange biscuits can her brother get? [3 marks]
- 美思有餅乾 80 塊。花生味餅乾占 $\frac{3}{4}$ ，其餘是香橙味餅乾。美思吃去其中 5 塊香橙味餅乾後，她把香橙味餅乾餘下的 $\frac{1}{5}$ 分給弟弟。弟弟有香橙味餅乾多少塊？
18. Marco gets on the plane at 23:45, and takes off at 2:23 a.m. How many minutes does the flight take? [3 marks]
- 小傑在 23:45 上飛機，並於 2:23 a.m. 落飛機。他乘坐飛機用了多少分鐘？

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Part 3 O Math Questions 奧數題

19. Arrange 38 triangle flags as shown in the figure, how many white flags are there? [4.5 marks]
- 把 38 面小三角旗按下圖排列，其中有多少面白旗？



20. Evaluate $1000-81-19-82-18-83-17-84-16-85-15-86-14-87-13-88-12-89-11$ [4.5 marks]
- 計算 $1000-81-19-82-18-83-17-84-16-85-15-86-14-87-13-88-12-89-11$

21. Lily has 80 stamps. Kelly has 60 stamps. How many stamps should Kelly give to Lily such that Lily has 4 times the number of stamps of Kelly? [4.5 marks]
- 紅紅有郵票 80 張，佳佳有郵票 60 張，要使紅紅的郵票張數是佳佳的 4 倍，那麼佳佳必須給紅紅多少張郵票？

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22. Five years ago, the age of grandpa is 7 times that of the grandson. The grandson is 14 years old now. How old is the grandpa? 五年前爺爺年齡是孫子的 7 倍，孫子今年 14 歲，爺爺今年多少歲？ [4.5 marks]
23. A fruit shop sells watermelons. At first it sells half of the total, then it sells half of the remaining. At last, 10 watermelon remains. How many watermelons are there in the fruit shop originally? 某水果店賣西瓜，第一次賣掉總數的一半，第二次賣掉剩下的一半，這時還剩 10 只西瓜。原有西瓜多少個？ [4.5 marks]
24. A teacher shares a bag of candies to some children. If each child gets 10 candies, then 2 candies remain. If each child gets 11 candies, then 7 more candies are needed. How many candies are there in the bag? 幼稚園阿姨把一袋糖分給小朋友們，如果每人分 10 粒糖，則多了 2 粒糖；如果每人分 11 粒糖，則少了 7 粒糖。這袋糖有多少粒？ [4.5 marks]

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25. Students line up to do exercises, each row has the same number of students. Macro is the 8th from the left, the 12th from the right, the 5th from the front and the 3rd from the back. How many students are there doing exercises? 同學們排隊做早操，每行人數同樣多。小明的位置從左數起是第 8 個，從右數起是第 12 個，從前數起是第 5 個，從後數起是第 3 個。做早操的同學共有多少個？ [4.5 marks]
26. The average mark of the first four mathematics test of Yuki is 92 marks. The average mark of the first five mathematics test is 1 mark higher than that of the first four mathematics test. What is the mark of Yuki's fifth mathematics test? 小英首 4 次數學測驗的平均分是 92 分，首 5 次數學測驗的平均分比首 4 次的平均分提高 1 分。小英第 5 次測驗得多少分？ [4.5 marks]

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27. On a pond with perimeter 48 metre, a tree is planted every 6 metre. How many trees are planted?
- 在一個周長是 48 米的池塘周圍種樹，每隔 6 米種一棵樹，一共種了多少棵？ [4.5 marks]
28. There are 3 green pencils, 3 red pencils and 5 blue pencils in a box. If some pencils are picked at once without looking at the box, how many pencils are needed to be picked in order to ensure that there is at least one blue pencil?
- 盒子裡放有 3 枝綠鉛筆，3 枝紅鉛筆和 5 枝藍鉛筆，如果閉上眼睛摸一次，必須摸幾枝才能保證至少有 1 枝藍鉛筆？ [4.5 marks]

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29. Fanny attends a gathering. There are 19 people in the gathering in total. At the end, every two people shake their hands. How many handshakes are there in total? [4.5 marks]
- 小芳出席由 19 人參加的聯歡會，散會後，每兩人都要握一次手，他們一共握了多少次手？
30. Max's father earns 46000 dollars each month, which is 2000 dollars less than twice that of Max's mother. How much does Max's mother earn each month? [4.5 marks]
- 小明的父親每月工資 46000 元，比小明母親每月工資的 2 倍少 2000 元。小明母親每月工資多少元？

End of paper

全卷完