



主辦

小學數學精英大賽 2015/16

問題卷

Question Paper

時限：1 小時

Time allowed: 1 hour

參賽者須知：

Instructions to contestants:

- (a) 本卷包括 問題卷 乙份 及 答題紙 乙份。
Each contestant should have ONE Question Paper and ONE Answer Sheet.
- (b) 本卷分為 2 部份：甲部：巧算題目 及 乙部：問題解決。
The paper includes 2 parts, **Part A: Quick calculation** and **Part B: Problem solving**.
- (c) 本卷共設有 20 題，總分為 100 分。甲部每題佔 4 分，乙部每題佔 6 分。
There are 20 questions in this paper and the total score is 100. Each question in Part A carries 4 marks and each question in Part B carries 6 marks.
- (d) 把所有答案填寫在答題紙的指定空位上。
Put your answers on the space provided on the **ANSWER SHEET**.
- (e) 毋須呈交計算步驟。
You are not required to hand in your steps of working.
- (f) 不得使用計算機。
Using the calculator is NOT allowed.
- (g) 除特別指明外，分數的答案須化至最簡。
Unless otherwise stated, answers in the form of fractions should be expressed in their simplest form.
- (h) 本卷的附圖不一定依比例繪成。
The diagrams in this paper are not necessarily drawn to scale.

甲部：巧算題目（每題 4 分）

Part A: Quick calculation (4 marks each)

1. $(142857 + 142857) \times 7 \div 9 = ?$

2. $201620162016 \div 18$ ，餘數是甚麼？

2. What is the remainder of $201620162016 \div 18$?

3. $33 \div 0.375 \times 52 + 44 \times 96 = ?$

4. $1\frac{1}{2} + 3\frac{1}{12} + 2\frac{1}{6} + 5\frac{1}{30} + 4\frac{1}{20} = ?$

5. $0.5 \times 0.8 \times 0.875 \times \frac{2}{3} \times \frac{6}{7} = ?$

6. $9869864004 \div 7 \div 11 \div 13 = ?$

7. $A \Delta B = (B - A) \div 2$
例如： $7 \Delta 9 = 1$ ， $5 \Delta 15 = 5$ 。
已知 $3 \Delta (2 \Delta Y) = 10.5$ ，求 Y。

7. $A \Delta B = (B - A) \div 2$
For example, $7 \Delta 9 = 1$, $5 \Delta 15 = 5$.
Given that $3 \Delta (2 \Delta Y) = 10.5$, find Y.

8.
$$\frac{8888 \times 2 + 6666 \times 5 + 7777 \times 3 - 1111}{4444 \times 4 + 5555 \times 9 + 1111 \times 5} = ?$$

9. 兩個連續單數的積加上 1 等於 9604。
這兩個連續單數是什麼？

9. The product of two consecutive odd numbers plus 1 equals 9604.
What are these two odd numbers?

10. $2016 \times (33\frac{1}{3}\% + \frac{1}{6}) + 1008 \times (0.002 + \frac{499}{500}) = ?$

乙部：問題解決（每題 6 分）

Part B: Problem solving (6 marks each)

11. 演唱會上半場 48 人離開，剩下的觀眾中，男觀眾人數是女觀眾的 60%。已知上半場離開的觀眾佔所有觀眾的十分之一，問下半場剩下男女觀眾各多少人？

11. In a concert, 48 people left after the first part. Among the remaining audience, the number of male audience members is 60% of that of female. Given that the left audience is one tenth of the total audience, how many people remained in the audience are male? How many are female?

12. 路長 26 km，分為兩段，各長 13 km。汽車在前半段以每小時 60 km 行駛，在後半段以每小時 90 km 行駛。汽車全程的平均車速是多少？

12. A road is 26 km long, which is divided into two parts. Each part is 13 km long. A car travels at a speed of 60 km per hour in the first part and 90 km per hour in the second part. What is the average speed of the car for the whole journey?

13.



直路由甲到乙共長 1000 米。從甲到乙每隔 10 米種一棵樹，從乙到甲每隔 9 米裝置一盞街燈。在整段路中，樹和街燈共在多少處地方重疊？

A straight road from A to B is 1000 m long. Trees are planted every 10 m from A to B and streetlights are installed every 9 m from B to A. How many times are the trees and the streetlights overlapped throughout the whole road?

14. 全校男老師和女老師人數的比是 3 : 5。如果兩位男老師離職及新聘請兩位女老師，男老師和女老師人數的比變為 5 : 11。全校共有老師多少人？

14. The ratio of the number of male teachers to the number of female teachers is 3 : 5 in a school. If two male teachers resign, and two more female teachers are recruited, the ratio of the number of male teachers to the number of female teachers would become 5 : 11. How many teachers are there in the school?

15. 黑棋子每隻重 11 克，白棋子每隻重 10 克。50 隻黑白棋子混合在一起，共重 526 克。問黑白棋子各有多少隻？

15. Each black chess weighs 11 g, whereas each white chess weighs 10 g. 50 chesses are mixed together and they weigh 526 g in total. How many black chesses and white chesses are there?

16.

$$\frac{1^2 + 2^2}{1 + 2} = \frac{1 + 4}{3} = \frac{5}{3}$$

$$\frac{1^2 + 2^2 + 3^2}{1 + 2 + 3} = \frac{1 + 4 + 9}{6} = \frac{7}{3}$$

$$\frac{1^2 + 2^2 + 3^2 + 4^2}{1 + 2 + 3 + 4} = \frac{30}{10} = \frac{9}{3}$$

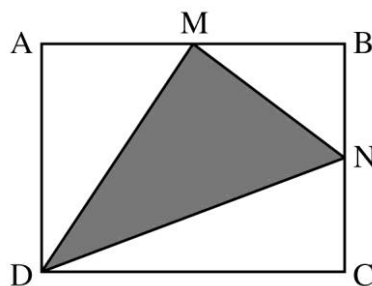
$$\frac{1^2 + 2^2 + 3^2 + 4^2 + 5^2}{1 + 2 + 3 + 4 + 5} = \frac{55}{15} = \frac{11}{3}$$

求 $1^2 + 2^2 + 3^2 + \dots + 40^2$ 的值。

Find the value of $1^2 + 2^2 + 3^2 + \dots + 40^2$.

17. ABCD 是一個長方形。M 是 AB 的中點，N 是 BC 的中點。已知陰影部分面積為 13.5 cm^2 ，求長方形面積。

17. ABCD is a rectangle. M is the mid-point of AB, and N is the mid-point of BC. Given that the area of the shaded part is 13.5 cm^2 , find the area of the rectangle.



18. 書枱連椅子八折出售，售價為 \$560。如果分開購買，書枱只可獲 9 折，椅子不獲減價，結果售價為 \$650。問書枱和椅子原價各為多少？

18. A desk with a chair are sold at a discount of 20% and the total selling price is \$560. If a desk and a chair are bought separately, the desk is sold only at a discount of 10% and there is no discount for the chair. The total selling price is \$650. What are the original prices of the desk and the chair respectively?

19. 利用 360 張紙制成厚和薄的筆記簿共 13 本。已知每本厚筆記簿有 30 張紙，比薄筆記簿多 5 張紙。厚筆記簿和薄筆記簿各有多少本？

19. 360 pieces of paper are used to make thick notebooks and thin notebooks. 13 notebooks are made altogether. Given that each thick notebook has 30 pieces of paper and has 5 more pieces than each thin notebook, how many thick and thin notebooks are there?

20. 一列火車用 15 秒完全地經過一枝電線桿。火車穿過一條隧道用了 75 秒。已知該隧道長 1080 米，假設火車的速率不變，求火車的長度。

20. It takes a train 15 seconds to pass a power pole completely. It takes the train 75 seconds to pass through a tunnel. The tunnel is 1080 m long. Assuming that the speed of the train remains unchanged, find the length of the train.

全卷完

END OF PAPER