

### 第三十六屆香港數學競賽(2018/19)

#### 初賽規則

1. 初賽分個人項目、團體項目和幾何作圖項目三部分，個人項目限時六十分鐘，團體項目限時二十分鐘，而幾何作圖項目則限時二十分鐘。
2. 每隊由四至六位中五或以下同學組成。其中任何四位可參加個人項目；又其中任何四位可參加團體項目及幾何作圖項目。不足四位同學的隊伍將被撤銷參賽資格。
3. 每隊隊員必須穿著整齊校服，並由負責教師帶領，於上午9時或以前向會場接待處註冊，同時必須出示身分證/學生證明文件，否則將被撤銷參賽資格。
4. 指示語言將採用粵語。若參賽者不諳粵語，則可獲發給一份中、英文指示。比賽題目則中、英文並列。
5. 每一隊員於個人項目中須解答15條問題（當中甲部佔10題、乙部佔5題）；而每一隊伍則須於團體項目中解答10條問題；並在幾何作圖項目中解答所有問題。
6. 團體項目及幾何作圖項目中，各參賽隊員可進行討論，但必須將聲浪降至最低。
7. 各參賽隊伍須注意：
  - (a) 個人項目及團體項目比賽時，不准使用計算機、四位對數表、量角器、圓規、三角尺及直尺等工具，
  - (b) 幾何作圖項目比賽時，只准使用書寫工具（例如：原子筆、鉛筆等）、圓規及大會提供的直尺，違例隊伍將被撤銷參賽資格或扣分。
8. 除非另有聲明，否則所有個人項目及團體項目中問題的答案均為數字，並應化至最簡，但無須呈交證明及算草。
9. 參賽者如有攜帶電子通訊器材(包括平板電腦、手提電話、多媒體播放器、電子字典、具文字顯示功能的手錶、智能手錶或其它穿戴式附有通訊或資料貯存功能之科技用品)或其它響鬧裝置，應把它關掉，並放入手提包內或座位的椅下。
10. 個人項目中，甲部和乙部的每一正確答案分別可得1分及2分。每隊可得之最高積分為80分。
11. 團體項目中，每一正確答案均可得2分。每隊可得之最高積分為20分。
12. 至於幾何作圖項目，每隊可得之最高積分為20分（必須詳細列出所有步驟，包括作圖步驟）。
13. 初賽中，並不給予快捷分。
14. 參賽者必須自備工具，例如：原子筆、鉛筆及圓規。
15. 籌委會將根據各參賽隊伍的總成績（個人項目、團體項目及幾何作圖項目的積分總和）選出最高積分的五十隊進入決賽。
16. 初賽獎項：
  - (a) 於個人項目比賽中，
    - (i) 取得滿分者將獲頒予最佳表現及積分獎狀；
    - (ii) 除上述 (i) 中取得最佳表現的參賽者外，
      - (1) 成績最佳的首 2% 參賽者將獲頒予一等榮譽獎狀；
      - (2) 隨後的 5% 參賽者將獲頒予二等榮譽獎狀；
      - (3) 緊接著的 10% 參賽者將獲頒予三等榮譽獎狀。
  - (b) 於團體項目中取得滿分的隊伍將獲頒予最佳表現及積分獎狀。
  - (c) 於幾何作圖項目中表現優秀的隊伍將獲頒予獎狀。
  - (d) 於各分區的比賽中，總成績（個人項目、團體項目及幾何作圖項目的積分總和）最高之首10%的參賽隊伍將獲頒予獎狀。
17. 如有任何疑問，參賽者須於比賽完畢後，立即向會場主任提出。所提出之疑問，將由籌委會作最後裁決。

## The Thirty-sixth Hong Kong Mathematics Olympiad (2018/19)

### Regulations (Heat Events)

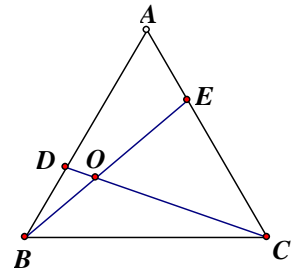
1. The Heat Events consists of three parts: **60 minutes** for the individual event, 20 minutes for the group event and 20 minutes for the geometric construction event.
2. Each team should consist of 4 to 6 members who are students of **Secondary 5** level or below. Any 4 of them may take part in the individual event and any 4 of them may take part in the group event and the geometric construction event. Teams of less than 4 members will be disqualified.
3. Members of each team, **accompanied by the teacher-in-charge, should wear proper school uniform** and present **ID Card or student identification document** when registering at the venue reception not later than 9:00 a.m. Failing to do so, the team **will be disqualified**.
4. Verbal instructions will be given in Cantonese. However, for competitors who do not understand Cantonese, written instructions in both Chinese and English will be provided. Question papers are printed in both Chinese and English.
5. Each member of a team has to solve 15 questions in the individual event (**10 questions in Part A** and **5 questions in Part B**) and each team has to solve 10 questions in the group event and **ALL** questions in the geometric construction event.
6. In the group event and geometric construction event, discussions among participating team members are allowed provided that the voice level is kept to a minimum.
7. Please note that
  - (a) for the individual and group events, devices such as calculators, four-figure tables, protractors, compasses, set squares and rulers will not be allowed to be used; and
  - (b) for the geometric construction event, only writing instruments (pens, pencils, etc), **straightedge provided and compasses** will be allowed to be used;otherwise the team will be disqualified or risk deduction of marks.
8. **All answers in the individual event and the group event should be numerical and reduced to the simplest form unless stated otherwise. No proof or demonstration of work is required.**
9. Participants having electronic communication devices (including tablets, mobile phones, multimedia players, electronic dictionaries, databank watches, smart watches or other wearable technologies with communication or storage functions) or any alarm device(s), should have them turned off and put them inside their bags or under their chairs.
10. For the individual event, 1 mark and 2 marks will be given to each correct answer in Part A and Part B respectively. The maximum score for a team should be 80.
11. For the group event, 2 marks will be given to each correct answer. The maximum score for a team should be 20.
12. For the geometric construction event, the maximum score for a team should be 20 (all working, including construction work, must be clearly shown).
13. No mark for speed will be awarded in the Heat Event.
14. Participants should bring along their own instruments, e.g. **ball pens, pencils and compasses**.
15. The 50 teams with the highest aggregate scores (sum of the scores in the individual event, the group event and the geometric construction event) will be qualified for the Final Event.
16. Awards of the Heat Event:
  - (a) For the individual event,
    - (i) candidates obtaining full score will be awarded Best Performance and Score certificates;
    - (ii) apart from the best performer(s) in (i),
      - (1) the first 2% of top scoring candidates will be awarded First-class honour certificates;
      - (2) the next 5% of top scoring candidates will be awarded Second-class honour certificates;and
      - (3) the next 10% of top scoring candidates will be awarded Third-class honour certificates;
  - (b) For the group event, teams obtaining full marks will be awarded Best Performance and Score certificates.
  - (c) For the geometric construction event, teams having outstanding performance will be awarded certificates of merit.
  - (d) About 10% of participating schools with the highest aggregate scores (sum of the scores in the individual event, the group event and the geometric construction event) in each region will be awarded certificates of merit.
17. Should there be any queries, participants should reach the Centre Supervisor immediately after the competition. The decision of the Organising Committee on the queries is final.

**Hong Kong Mathematics Olympiad 2018-2019**  
**Heat Events (Individual)**  
**香港數學競賽 2018 – 2019**  
**初賽項目(個人)**

除特別指明外，所有答案須以數字之真確值表達，並化至最簡。不接受近似值。時限：1 小時  
 Unless otherwise stated, all answers should be given in exact numerals in their simplest form. Time allowed: 1 hour  
 No approximation is accepted.  
 Q1- Q10 每題 1 分，Q11-Q15 每題 2 分。Q1- Q10 1 mark each, Q11-Q15 2 marks each.  
 全卷滿分 20 分。The maximum mark for this paper is 20.

1. 在圖一中， $ABC$  是一個等邊三角形。 $D$  和  $E$  分別是  $AB$  和  $AC$  上的點，使得  $AE = BD$ 。若  $CD$  和  $BE$  相交於  $O$  及  $\angle COE = y^\circ$ ，求  $y$  的值。

In Figure 1,  $ABC$  is an equilateral triangle.  $D$  and  $E$  are points on  $AB$  and  $AC$  respectively such that  $AE = BD$ . If  $CD$  and  $BE$  intersect at  $O$  and  $\angle COE = y^\circ$ , find the value of  $y$ .



圖一 Figure 1

2. 設  $O$  為極座標系統的極點。若  $P(6, 240^\circ)$  向右平移 16 單位至  $Q$  而  $\triangle OPQ$  的面積為  $T$  平方單位，求  $T$  的值。

Let  $O$  be the pole of the polar coordinate system. If  $P(6, 240^\circ)$ . If  $P$  is translated to the right by 16 units to  $Q$  and the area of  $\triangle OPQ$  is  $T$  square units, find the value of  $T$ .

3. 已知  $x$  及  $y$  均為實數，若  $y^2 - 4xy + 5x^2 - 8x + 16 = 0$  及  $F = x - y$ ，求  $F$  的值。

Given that  $x$  and  $y$  are real numbers.

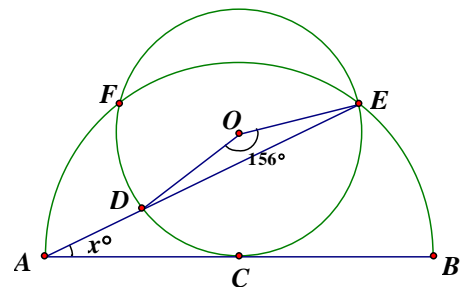
If  $y^2 - 4xy + 5x^2 - 8x + 16 = 0$  and  $F = x - y$ , find the value of  $F$ .

4. 設  $n$  為正整數。若  $a_n = 1 + 2 + \dots + 2^n$  及  $b = a_{10} - a_5 + a_1$ ，求  $b$  的值。

Let  $n$  be a positive integer. If  $a_n = 1 + 2 + \dots + 2^n$  and  $b = a_{10} - a_5 + a_1$ , find the value of  $b$ .

5. 在圖二中， $AB$  為半圓的直徑， $C$  為半圓的圓心。有一圓形，圓心  $O$  切  $AB$  於  $C$  及交半圓於  $E$  和  $F$ 。若  $AE$  交此圓形於  $D$ ， $\angle DOE = 156^\circ$  及  $\angle BAE = x^\circ$ ，求  $x$  的值。

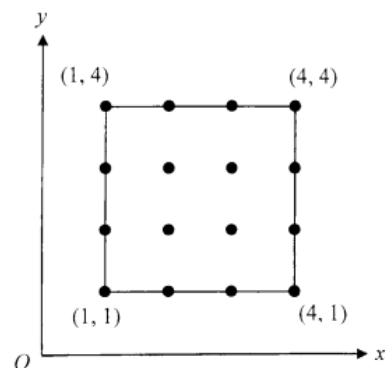
In Figure 2,  $AB$  is the diameter of the semi-circle,  $C$  is the centre of the semi-circle. A circle with centre at  $O$ , touching the semi-circle at  $C$  and cutting it at  $E$  and  $F$ . If  $AE$  cuts the circle at  $D$ ,  $\angle DOE = 156^\circ$  and  $\angle BAE = x^\circ$ , find the value of  $x$ .



圖二 Figure 2

6. 在圖三中，直角座標平面上的一個正方形的四個頂點的座標分別為  $(1, 1)$ 、 $(1, 4)$ 、 $(4, 1)$  及  $(4, 4)$ 。若在該正方形中(包括邊界)選擇任何三個座標均為整數的點，問可組成多少個三角形？

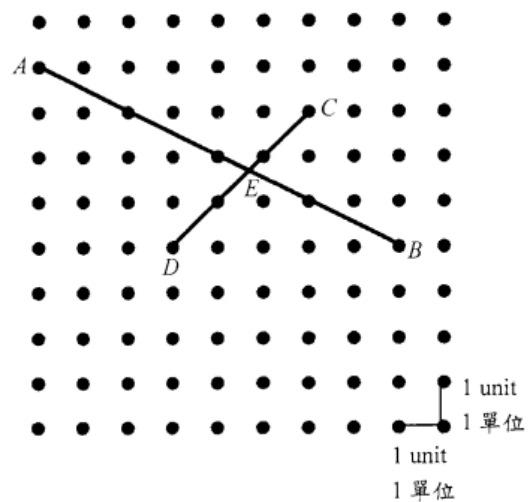
In Figure 3, the vertices of a square in the rectangular coordinate plane are  $(1, 1)$ ,  $(1, 4)$ ,  $(4, 1)$  and  $(4, 4)$ . How many triangles can be formed by selecting any three points in the square (including the boundaries) with integer coordinates?



圖三 Figure 3

7. 在圖四中， $AB$  與  $CD$  相交於  $E$ 。設  $AE$  的長度為  $q$  單位，求  $q$  的值。

In Figure 4,  $AB$  and  $CD$  intersect at  $E$ . Let the length of  $AE$  be  $q$  units. Find the value of  $q$ .

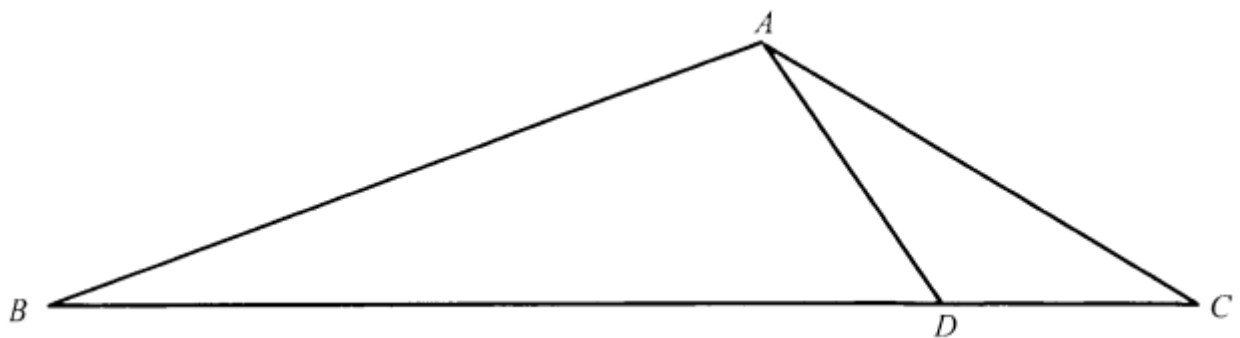


圖四 Figure 4

8. 在圖五中， $D$  是在  $BC$  上的一點使得  $\angle ABD = \angle CAD$  及  $\frac{BD}{AC} = \frac{8}{3}$ 。若  $\frac{\Delta ABD \text{ 的面積}}{\Delta ADC \text{ 的面積}} = k$ ，求  $k$  的值。

In Figure 5,  $D$  is a point on  $BC$  such that  $\angle ABD = \angle CAD$  and  $\frac{BD}{AC} = \frac{8}{3}$ .

If  $\frac{\text{Area of } \Delta ABD}{\text{Area of } \Delta ADC} = k$ , find the value of  $k$ .



圖五 Figure 5

9. 已知  $\alpha$  及  $\beta$  為方程  $x^2 + 32x - 1 = 0$  的兩個根。若  $P = (\alpha^2 + 31\alpha - 2)(\beta^2 + 33\beta)$ ，求  $P$  的值。

Given that  $\alpha$  and  $\beta$  are the two roots of the equation  $x^2 + 32x - 1 = 0$ .

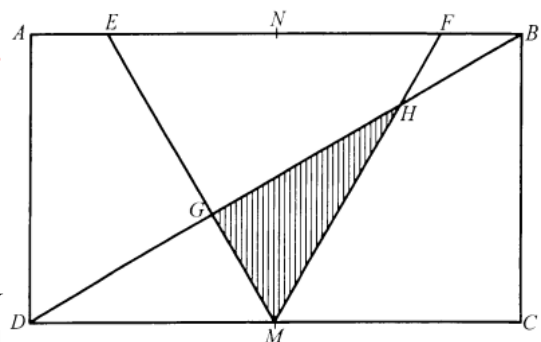
If  $P = (\alpha^2 + 31\alpha - 2)(\beta^2 + 33\beta)$ , find the value of  $P$ .

10. 設  $c = \sqrt[3]{7+5\sqrt{2}} + \sqrt[3]{7-5\sqrt{2}}$ 。若  $w = c^2$ ，求  $w$  的值。

Let  $c = \sqrt[3]{7+5\sqrt{2}} + \sqrt[3]{7-5\sqrt{2}}$ . If  $w = c^2$ , find the value of  $w$ .

11. 在圖六中， $ABCD$  為一個長方形。 $M$  和  $N$  分別是  $DC$  和  $AB$  的中點且  $AE:EN = BF:FN = 1:2$ 。 $DB$  分別交  $EM$  和  $FM$  於  $G$  及  $H$ 。若長方形  $ABCD$  及三角形  $GHM$  的面積分別是 96 和  $S$ ，求  $S$  的值。

In Figure 6,  $ABCD$  is rectangle  $M$  and  $N$  are the mid-points of  $DC$  and  $AB$  respectively and  $AE:EN = BF:FN = 1:2$ .  $DB$  intersects  $EM$  and  $FM$  at  $G$  and  $H$  respectively. If the areas of the rectangle  $ABCD$  and the triangle  $GHM$  are 96 and  $S$  respectively, find the value of  $S$ .



圖六 Figure 6

12. 在三角形  $ABC$  中， $AB=14$ 、 $BC=48$  及  $AC=50$ 。將  $P$  及  $Q$  分別記為  $\triangle ABC$  的內心及外心。設  $PQ$  的長度為  $d$  單位。求  $d$  的值。

In triangle  $ABC$ ,  $AB = 14$ ,  $BC = 48$  and  $AC = 50$ . Denote the in-centre and circumcentre of  $\triangle ABC$  by  $P$  and  $Q$  respectively. Let the length of  $PQ$  be  $d$  units. Find the value of  $d$ .

13. 已知正整數  $a$ 、 $b$  及  $c$  滿足下列條件：

- (i)  $a > b > c$ ,
- (ii)  $(a-b)(b-c)(a-c) = 84$ ,
- (iii)  $abc < 100$ .

設  $M$  為  $a$  的最大值。求  $M$  的值。

Given that  $a$ ,  $b$  and  $c$  are positive integers satisfying the following conditions:

- (i)  $a > b > c$ ,
- (ii)  $(a-b)(b-c)(a-c) = 84$ ,
- (iii)  $abc < 100$ .

Let  $M$  be the maximum value of  $a$ . Find the value of  $M$ .

14. 已知  $3 \sin x + 2 \sin y = 4$ 。設  $N$  為  $3 \cos x + 2 \cos y$  的最大值。求  $N$  的值。

Given that  $3 \sin x + 2 \sin y = 4$ . Let  $N$  be the maximum value of  $3 \cos x + 2 \cos y$ .

Find the value of  $N$ .

15. 已知  $x$ 、 $y$  及  $z$  為正實數且滿足 
$$\begin{cases} x^2 + xy + y^2 = 7 \\ y^2 + yz + z^2 = 21 \\ x^2 + xz + z^2 = 28 \end{cases}$$
。若  $a = x + y + z$ ，求  $a$  的值。

Given that  $x$ ,  $y$  and  $z$  are positive real numbers satisfying 
$$\begin{cases} x^2 + xy + y^2 = 7 \\ y^2 + yz + z^2 = 21 \\ x^2 + xz + z^2 = 28 \end{cases}$$

If  $a = x + y + z$ , find the value of  $a$ .

**Hong Kong Mathematics Olympiad 2018-2019**  
**Heat Events (Group)**  
**香港數學競賽 2018 – 2019**  
**初賽項目(團體)**

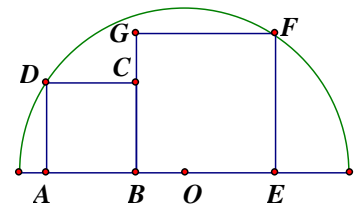
除特別指明外，所有答案須以數字之真確值表達，並化至最簡。不接受近似值。 時限：20 分鐘  
 Unless otherwise stated, all answers should be given in exact numerals in their simplest form.  
 No approximation is accepted. Time allowed: 20 minutes  
 每題正確答案得兩分。Each correct answer will be awarded 2 marks.  
 全卷滿分 20 分。The maximum mark for this paper is 20 .

1. 對所有正實數  $x$ ，定義  $f(x) = \log_{2019} x^{2020}$ 。若  $D = f(\sqrt{3}) + f(\sqrt{673})$ ，求  $D$  的值。

For all positive value real numbers  $x$ , define  $f(x) = \log_{2019} x^{2020}$ . If  $D = f(\sqrt{3}) + f(\sqrt{673})$ , find the value of  $D$ .

2. 圖一所示， $ABCD$  和  $BEFG$  是兩個緊貼的正方形，躺臥在一個以  $O$  為圓心，半徑為 5 cm 的半圓上。其中  $A$ 、 $B$  和  $E$  在半圓的直徑， $D$  和  $F$  在半圓的弧上。設  $ABCD$  與  $BEFG$  的面積之和為  $S \text{ cm}^2$ ，求  $S$  的值。

Figure 1 shows two adjacent squares  $ABCD$  and  $BEFG$  lying on a semi-circle with centre  $O$  and radius 5 cm.  $A$ ,  $B$  and  $E$  lie on the diameter of the semi-circle,  $D$  and  $F$  lie on the semi-circular arc. Let the sum of areas of  $ABCD$  and  $BEFG$  be  $S \text{ cm}^2$ , find the value of  $S$ .

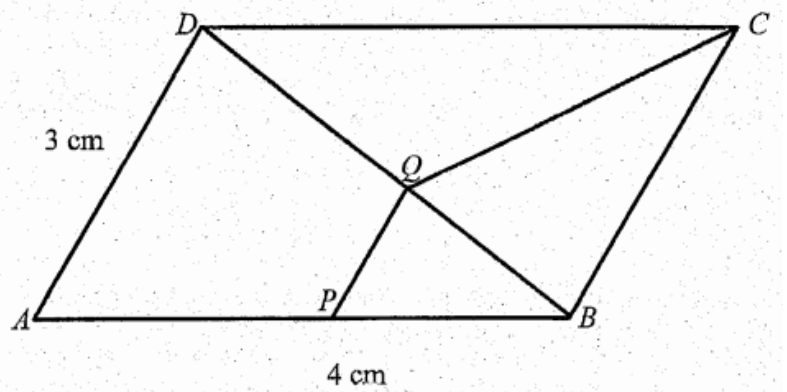


圖一 Figure 1

3. 若從一個正九邊形的 9 個頂點中選 3 點，共可組成多少個等腰三角形？

If three vertices are chosen from the nine vertices of a regular nonagon, how many possible isosceles triangles are there ?

4. 在圖二中， $ABCD$  為一個平行四邊形，其中  $AB = 4 \text{ cm}$ 、 $AD = 3 \text{ cm}$  及  $\sin A = \frac{2}{3}$ 。  $P$  和  $Q$  分別是  $AB$  和  $BD$  上的點使得  $PQ \parallel AD$ ，且四邊形  $PBCQ$  的面積為  $3 \text{ cm}^2$ 。設  $AP$  的長度為  $q \text{ cm}$ ，求  $q$  的值。



圖二 Figure 2

In Figure 2,  $ABCD$  is a parallelogram, where  $AB = 4 \text{ cm}$ ,  $AD = 3 \text{ cm}$  and  $\sin A = \frac{2}{3}$ .  $P$  and  $Q$  are points on  $AB$  and  $BD$  respectively such that  $PQ \parallel AD$ , and the area of the quadrilateral  $PBCQ$  is  $3 \text{ cm}^2$ . Let the length of  $AP$  be  $q \text{ cm}$ , find the value of  $q$ .

5. 已知  $f(x) - 2f\left(\frac{1}{x}\right) = x$ ，其中  $x \neq 0$ 。

設  $y$  為滿足方程  $f(x) = 1$  的  $x$  的最大值。求  $y$  的值。

Given that  $f(x) - 2f\left(\frac{1}{x}\right) = x$ , where  $x \neq 0$ .

Let  $y$  be the maximum value of  $x$  that satisfies the equation  $f(x) = 1$ . Find the value of  $y$ .

6. 設  $a_k$  為多項式  $(2x-2)^3(2x+2)^3(2x+1)^3$  中  $x^k$  的係數。  
 若  $Q = a_2 + a_4 + a_6 + a_8$ ，求  $Q$  的值。  
 Let  $a_k$  be the coefficient of  $x^k$  in the polynomial  $(2x-2)^3(2x+2)^3(2x+1)^3$ .  
 If  $Q = a_2 + a_4 + a_6 + a_8$ , find the value of  $Q$ .
7. 設  $f(x) = -6x^2 + 4x \cos \theta + \sin \theta$ ，其中  $0^\circ \leq \theta \leq 360^\circ$ 。已知對所有實數  $x$ ， $f(x) \leq 0$ 。若  $\theta$  的最大值與最小值之差為  $d^\circ$ ，求  $d$  的值。  
 Let  $f(x) = -6x^2 + 4x \cos \theta + \sin \theta$ , where  $0^\circ \leq \theta \leq 360^\circ$ . It is given that  $f(x) \leq 0$  for all real numbers  $x$ . If  $d^\circ$  is the difference between the greatest and the least values of  $\theta$ , find the value of  $d$ .
8. 設  $\{a_n\}$  為一個正實數序列使當  $n > 1$  時， $a_n = a_{n-1}a_{n+1} - 1$ 。  
 已知 2018 在序列中及  $a_2 = 2019$ 。若  $a_1$  的所有可取的數目為  $s$ ，求  $s$  的值。  
 Let  $\{a_n\}$  be a sequence of positive real numbers such that  $a_n = a_{n-1}a_{n+1} - 1$  for  $n > 1$ .  
 It is given that 2018 is in the sequence and  $a_2 = 2019$ . If the number of all possible values of  $a_1$  is  $s$ , find the value of  $s$ .
9. 有多少對正整數  $x, y$  可滿足  $xy = 6(x + y + \sqrt{x^2 + y^2})$ ？  
 How many pairs of positive integers  $x, y$  are there satisfying  $xy = 6(x + y + \sqrt{x^2 + y^2})$ ?
10.  $D$  是等邊三角形  $ABC$  內的一點使得  $AD = BD = 5\sqrt{2}$  及  $CD = 10$ 。  
 設  $\triangle ABC$  的面積為  $S$ ，求  $S$  的值。  
 $D$  is a point inside the equilateral triangle  $ABC$  such that  $AD = BD = 5\sqrt{2}$  and  $CD = 10$ . Let the area of  $\triangle ABC$  be  $S$ , find the value of  $S$ .

**Hong Kong Mathematics Olympiad 2018 – 2019**  
**Heat Events (Geometric Construction)**  
**香港數學競賽 2018 – 2019**  
**初賽(幾何作圖)**

每隊必須列出詳細所有步驟(包括作圖步驟)。

時限：20 分鐘

All working (including geometric drawing) must be clearly shown.

此部份滿分為二十分。The full marks of this part is 20 marks.

Time allowed: 20 minutes

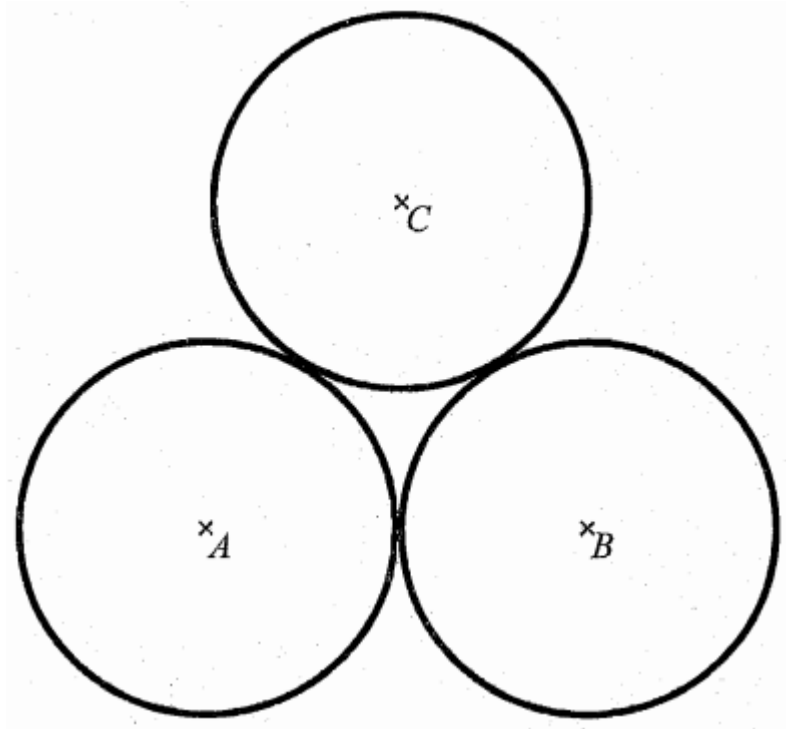
School ID: \_\_\_\_\_

School Name: \_\_\_\_\_

第一題 Question No. 1

圖一所示為三個半徑相等且兩兩相切的圓。試作一圓使得它與圖中每一圓相切於一點。

Figure 1 shows three circles with equal radius which are pairwise tangents to each other. Construct a circle which will touch each circle in the figure at a point.



圖一 Figure 1



**Hong Kong Mathematics Olympiad 2018 – 2019**  
**Heat Events (Geometric Construction)**  
**香港數學競賽 2018 – 2019**  
**初賽(幾何作圖)**

每隊必須列出詳細所有步驟(包括作圖步驟)。

時限：20 分鐘

All working (including geometric drawing) must be clearly shown.

此部份滿分為二十分。The full marks of this part is 20 marks.

Time allowed: 20 minutes

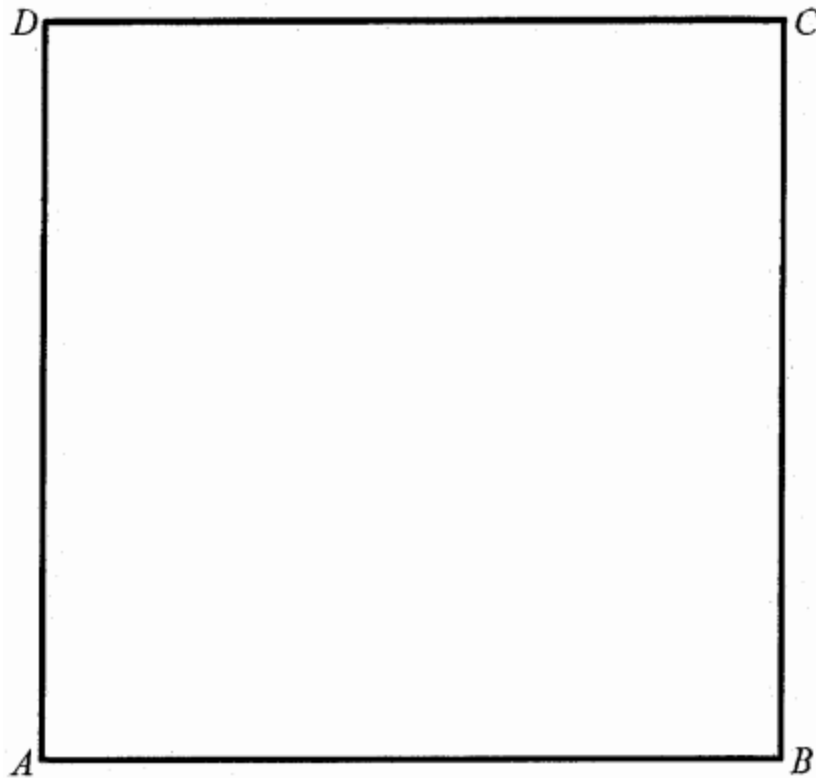
School ID: \_\_\_\_\_

School Name: \_\_\_\_\_

**第二題 Question No. 2**

圖二所示為一個邊長為 1 單位的正方形  $ABCD$ 。試作一個三角形  $APQ$ ，其中  $P$ 、 $Q$  分別位於  
線段  $BC$ 、 $CD$  上且  $\angle PAB = \angle QAD = 15^\circ$ 。寫出  $APQ$  是哪一類三角形。

Figure 2 shows a square  $ABCD$  with side 1 unit. Construct a triangle  $APQ$ , in which  $P$ ,  $Q$  lie on the line segments  $BC$  and  $CD$  respectively, and  $\angle PAB = \angle QAD = 15^\circ$ . Write down the type of triangle that  $APQ$  is.



圖二 Figure 2

**Hong Kong Mathematics Olympiad 2018 – 2019**  
**Heat Events (Geometric Construction)**  
**香港數學競賽 2018 – 2019**  
**初賽(幾何作圖)**

每隊必須列出詳細所有步驟(包括作圖步驟)。

時限：20 分鐘

All working (including geometric drawing) must be clearly shown.

此部份滿分為二十分。The full marks of this part is 20 marks.

Time allowed: 20 minutes

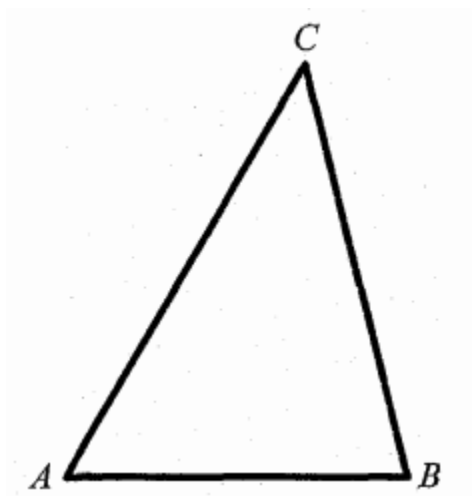
School ID: \_\_\_\_\_

School Name: \_\_\_\_\_

**第三題 Question No. 3**

圖三所示為一個三角形  $ABC$ 。試以  $A$ 、 $B$  及  $C$  為圓心分別構作三個圓，使得它們兩兩相切。

Figure 3 shows a triangle  $ABC$ . Use  $A$ ,  $B$  and  $C$  as centres to construct three circles respectively that are pairwise tangent to each other.



圖三 Figure 3

\*\*\* 試卷完 End of Paper \*\*\*

參加學校數目：197

初賽日期：2019 年 2 月 16 日星期六

試場一(HK1)：中華傳道會劉永生中學(36 隊)

試場二(KLN1)：香港四邑商工總會黃棣珊紀念中學(50 隊)

試場三(KLN2)：真光女書院(50 隊)

試場四(NT1)：香港道教聯合會鄧顯紀念中學(31 隊)

試場四(NT2)：屯門天主教中學 (30 隊)

### **Regional winners of the Heat Event**

#### **Hong Kong Island Region**

Hong Kong Chinese Women's Club College

Queen's College

SKH Tang Shiu Kin Secondary School

St Paul's Co-Educational College

#### **Kowloon Region 1**

Bishop Hall Jubilee School

Diocesan Boys' School

La Salle College

Po Leung Kuk No. 1 WH Cheung College

Sing Ying Secondary School

#### **Kowloon Region 2**

Diocesan Girls' School

Pui Ching Middle School

SKH Lam Woo Memorial Secondary School

Tsuen Wan Government Secondary School

Ying Wa College

#### **New Territories Region 1**

HKTA Tang Hin Memorial Secondary School

Kiangsu-Chekiang College (Shatin)

SKH Tsang Shiu Tim Secondary School

TWGH Li Ka Shing College

#### **New Territories Region 2**

Christian Alliance S.C. Chan Memorial College

NTHYK Yuen Long District Secondary School

PLK Centenary Li Shiu Chung Memorial College

The ELCHK Yuen Long Lutheran Secondary School

<u>School ID</u>	<u>Name of School</u> <b>school</b> = new school entering final event this year
FE-01	Baptist Lui Ming Choi Secondary School
FE-02	Bishop Hall Jubilee School
FE-03	Carmel Divine Grace Foundation Secondary School
FE-04	<b>Cheung Chuk Shan College</b>
FE-05	<b>Cheung Sha Wan Catholic Secondary School</b>
FE-06	Christian Alliance S.C. Chan Memorial College
FE-07	Diocesan Boys' School
FE-08	Diocesan Girls' School
FE-09	<b>FDBWA Szeto Ho Secondary School</b>
FE-10	<b>Fukien Secondary School</b>
FE-11	Good Hope School
FE-12	Heung To Middle School
FE-13	HKSYC & IA Wong Tai Shan Memorial College
FE-14	HKTA Tang Hin Memorial Secondary School
FE-15	<b>Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School</b>
FE-16	Hong Kong Chinese Women's Club College
FE-17	Kiangsu-Chekiang College (Shatin)
FE-18	<b>King Ling College</b>
FE-19	La Salle College
FE-20	Munsang College
FE-21	NTHYK Yuen Long District Secondary School
FE-22	<b>Po Leung Kuk Celine Ho Yam Tong College</b>
FE-23	Po Leung Kuk Centenary Li Shiu Chung Memorial College
FE-24	Po Leung Kuk No. 1 WH Cheung College
FE-25	<b>Po Leung Kuk Tang Yuk Tien College</b>
FE-26	Po On Commerce Association Wong Siu Ching Secondary School
FE-27	Pui Ching Middle School
FE-28	Queen Elizabeth School
FE-29	Queen's College
FE-30	<b>Sha Tin Government Secondary School</b>
FE-31	Sing Yin Secondary School
FE-32	<b>SKH Bishop Mok Sau Tseng Secondary School</b>
FE-33	SKH Lam Woo Memorial Secondary School
FE-34	<b>SKH Tang Shiu Kin Memorial Secondary School</b>
FE-35	<b>SKH Tsang Shiu Tim Memorial Secondary School</b>
FE-36	St Joseph's College
FE-37	<b>St Mark's School</b>
FE-38	St Paul's Co-Educational College
FE-39	St Paul's College
FE-40	STFA Lee Shau Kee College
FE-41	<b>The Chinese Foundation Secondary School</b>
FE-42	The ELCHK Yuen Long Lutheran Secondary School
FE-43	Tsuen Wan Government Secondary School
FE-44	<b>TWGH Lo Kon Ting Memorial College</b>
FE-45	<b>TWGH Li Ka Shing College</b>
FE-46	Wa Ying College
FE-47	Wah Yan College, Hong Kong
FE-48	Wah Yan College, Kowloon
FE-49	Ying Wa College
FE-50	Yuen Long Merchants Association Secondary School