第三十三屆香港數學競賽 (2015/16)
決賽規則

1. 競賽共分**八**項，個人及團體各佔***四***項。
2. 每隊由已報名參加初賽的同學組成。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」。不足四位同學的隊伍將不獲准出賽。
3. 每隊隊員必須**穿著整齊校服，並由負責老師帶領**，於**上午 9 時正或以前**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. 粵語將會被採用為指示語言。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、英並列。
5. 每一「個人項目」包括四部份。每一隊員回答其中一部份，其他隊友不得從旁協助，否則此項目所得分數會被取消。
6. 「個人項目」中，四部份互有關連或沒有關連(參閱 FI2.3)。解答第二部份之隊員或需利用第一部份之答案，解答第三部份之隊員或需利用第二部份之答案，如此類推。
7. 每一「團體項目」亦包括四部份。但各部份不一定相關，且可由全隊共同作答。各隊員可進行討論，但必須將聲浪降至最低。
8. 比賽時，參賽者不可使用計算工具，違例者將被取消資格或扣分。
9. 參賽者如有攜帶電子通訊器材，應關掉電源(包括響鬧功能)並放入手提包內或座位的椅下，否則大會有權**取消該隊參賽資格**。
10. 除另有聲明外，所有答案須為數字，並應化簡，但無需呈交證明及算草。
11. 每一項目限時五分鐘。
12. 計分辦法如下：

(甲) 準確分:

個人項目	積分	團體項目	積分
答對第一部分	1	答對任何一部分	2
答對第二部分	2	答對任何兩部分	4
答對第三部分	3	答對任何三部分	7
答對第四部分	4	答對所有四部分	10
合共	10		

(乙) 快捷分

	積分所乘倍數
參賽隊伍完成並交出答案的時間 < 1 分鐘	**4**
1 分鐘 ≤ 參賽隊伍完成並交出答案的時間 < 2 分鐘	**3**
2 分鐘 ≤ 參賽隊伍完成並交出答案的時間 < 3 分鐘	**2**
參賽隊伍完成並交出答案的時間 ≥3 分鐘	**1**

(丙) 獎勵分

任何一隊在某一個人/團體項目競賽中，若全部答對時，可額外獲得 20 分。

(丁) 每項目之總分

準確分×倍數 ＋ 獎勵分

13. 如有任何疑問，參賽者須於最後一項個人/團體賽完畢後 10 分鐘內向評判團提出。所有提出之疑問，將由評判團作最後裁決。
14. 得分最高之三隊將獲得獎盃及獎品。冠軍學校可保存總冠軍盾牌至下一屆香港數學競賽。
15. 總成績將由評判團作最後裁決。

<u>The Thirty-third Hong Kong Mathematics Olympiad (2015/16)</u>
<u>Regulations (Final Events)</u>

1. The competition consists of ***8*** events, which are divided into ***4*** individual events and ***4*** group events.
2. Each participating team should consist of students who have enrolled in the heat event. Any 4 of them may take part in the individual event and any 4 of them may take part in the group event. Teams of less than 4 members will not be allowed to participate.
3. Members of each team, <u>**accompanied by the teacher-in-charge, should wear proper school uniform**</u> and present <u>**ID Card or student identification document**</u> when registering at the venue reception <u>**not later than 9:00 a.m.**</u> Failing to do so, the team <u>**will be disqualified.**</u>
4. Verbal instructions will be given in Cantonese. However, for competitors who do not understand Cantonese, instructions written in both Chinese and English will be provided. Question papers are printed in both English and Chinese.
5. Each individual event consists of 4 parts. Each part must be completed by one member of the team. Help from other team members would result in disqualification for that particular event.
6. In an individual event, the four parts may be interrelated or not related (e.g. See FI2.3). When solving Part 2, one may have to make use of the answer obtained in Part 1; when solving Part 3, one may have to make use of the answer obtained in Part 2 and so on.
7. In a group event, the four parts are to be done by the whole team and the parts may or may not be interrelated. Discussions are allowed provided that voice level is kept to a minimum.
8. Use of calculating devices will not be allowed; otherwise the team will risk disqualification or deduction of marks.
9. Participants having electronic communication devices should turn them off (including the alarm function) and be put inside their bags or under their chairs. Failing to do so, the team <u>**will risk disqualification**</u>.
10. All answers should be numerical and reduced to the simplest form unless stated otherwise. No proof or working is required.
11. The time limit for each event is 5 minutes.
12. The Marking System is as follows:

(a) Scores for accuracy:

<u>Individual Events</u>	<u>Scores</u>	<u>Group Events</u>	<u>Scores</u>
Part 1 correct ⋯	1	Any 1 part correct	⋯2
Part 2 correct ⋯	2	Any 2 parts correct	⋯4
Part 3 correct ⋯	3	Any 3 parts correct	⋯7
Part 4 correct ⋯	4	All 4 parts correct	⋯10
Total ⋯⋯⋯⋯	10		

(b) Multiplying factors for speed:

Time taken for the teams to hand in their answer < 1 min.	***4***
1 min. ≤ Time taken for the teams to hand in their answer < 2 min.	***3***
2 min. ≤ Time taken for the teams to hand in their answer < 3 min.	***2***
Time taken for the teams to hand in their answer ≥ 3 min.	***1***

(c) Bonus Score:
Teams, which hand in their answers of anyone individual/group event have all the answers in that event correct, will be awarded a bonus score of 20 marks.

(d) Total score for each event:
(Score for accuracy) × (Multiplying factor) + (Bonus score)

13. Any queries should reach the Judging Panel within 10 minutes after the end of the last individual group event. The decision of the Judging Panel on the queries is final.
14. Trophies and prizes will be given to the three schools achieving the highest scores. The champion school may keep the Champion shield until the next Hong Kong Mathematics Olympiad.
15. The decision of the Judging Panel on the overall results is final.

比賽資料 決賽隊伍數目：50 決賽日期：2016 年 4 月 23 日星期六　　地點：香港教育學院

決賽名單：

School ID	Name of School
FE-01	Baptist Lui Ming Choi Secondary School
FE-02	Bishop Hall Jubilee School
FE-03	Buddhist Sin Tak College
FE-04	Carmel Pak U Secondary School
FE-05	Carmel Secondary School
FE-06	CCC Heep Woh College
FE-07	Cheung Chuk Shan College
FE-08	Chinese Foundation Secondary School
FE-09	Chiu Lut Sau Memorial Secondary School
FE-10	CNEC Christian College
FE-11	Diocesan Boys' School
FE-12	G.T. (Ellen Yeung) College
FE-13	Good Hope School
FE-14	HKTA Tang Hin Memorial Secondary School
FE-15	Hoi Ping Chamber of Commerce Secondary School
FE-16	Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School
FE-17	Hong Kong Chinese Women's Club College
FE-18	King's College
FE-19	La Salle College
FE-20	Maryknoll Convent School (Secondary Section)
FE-21	Munsang College (Hong Kong Island)
FE-22	NTHYK Yuen Long District Secondary School
FE-23	PLK Centenary Li Shiu Chung Memorial College
FE-24	PLK No. 1 WH Cheung College
FE-25	PLK Tang Yuk Tien College
FE-26	Pui Ching Middle School
FE-27	Pui Kiu College
FE-28	Queen Elizabeth School
FE-29	Queen's College
FE-30	Sha Tin Government Secondary School
FE-31	Sha Tin Methodist College
FE-32	Shatin Tsung Tsin Secondary School
FE-33	Sing Yin Secondary School
FE-34	SKH Bishop Mok Sau Tseng Secondary School
FE-35	SKH Lam Woo Memorial Secondary School
FE-36	SKH Tsang Shiu Tim Secondary School
FE-37	South Island School
FE-38	St Joseph's College
FE-39	St Paul's Co-Educational College
FE-40	St Paul's College
FE-41	St Stephan's College
FE-42	STFA Lee Shau Kee College
FE-43	STFA Leung Kau Kui College
FE-44	Tsuen Wan Public Ho Chuen Yiu Memorial College
FE-45	Tuen Mun Catholic Secondary School
FE-46	TWGH Kap Yan Directors' College
FE-47	Wah Yan College, Hong Kong
FE-48	Wong Shiu Chi Secondary School
FE-49	Ying Wa College
FE-50	Yuen Long Merchant Association Secondary School

Hong Kong Mathematics Olympiad (2015 – 2016)
Final Event 1 (Individual)

Unless otherwise stated, all answers should be expressed in numerals in their simplest form.
除非特別聲明，答案須用數字表達，並化至最簡。

1. 解方程 $\log_5 a + \log_3 a = \log_5 a \cdot \log_3 a$，其中 $a > 1$ 為實數。
Solve the equation $\log_5 a + \log_3 a = \log_5 a \cdot \log_3 a$ for real number $a > 1$.

$a =$

2. 若 $\sqrt{b} = \sqrt{8+\sqrt{a}} + \sqrt{8-\sqrt{a}}$ ，求 b 的實數值。
If $\sqrt{b} = \sqrt{8+\sqrt{a}} + \sqrt{8-\sqrt{a}}$, determine the real value of b .

$b =$

3. 若方程 $x^2 - cx + b = 0$ 有兩個實數根及兩根之差為 1，
求兩根之和的最大可能值 c。
If the equation $x^2 - cx + b = 0$ has two distinct real roots and their difference is 1, determine the greatest possible value of the sum of the roots, c .

$c =$

4. 設 $d = \overline{xyz}$ 為一**不能**被 10 整除的三位數。若 $\overline{xyz}$ 與 $\overline{zyx}$ 之和可被 c 整除，
求此整數的最大可能值 d。
Let $d = \overline{xyz}$ be a three-digit integer that is **not** divisible by 10 .
If the sum of integers $\overline{xyz}$ and $\overline{zyx}$ is divisible by c ,
determine the greatest possible value of such an integer d.

$d =$

FOR OFFICIAL USE

Score for accuracy [ ] × Mult. factor for speed [ ] = [ ]   Team No. [ ]

+ Bonus score [ ]   Time [ ] [ ]

Total score [ ]   Min.   Sec.

Hong Kong Mathematics Olympiad (2015 – 2016)
Final Event 2 (Individual)

Unless otherwise stated, all answers should be expressed in numerals in their simplest form.
除非特別聲明，答案須用數字表達，並化至最簡。

1. 一個等邊三角形及一個正六邊形的周長比率為 1 : 1。
若三角形與六邊形的面積比率為 2 : a，求 a 的值。
Let the ratio of perimeter of an equilateral triangle to the perimeter of a regular hexagon be 1 : 1. If the ratio of the area of the triangle to the area of the hexagon is 2 : a, determine the value of a .

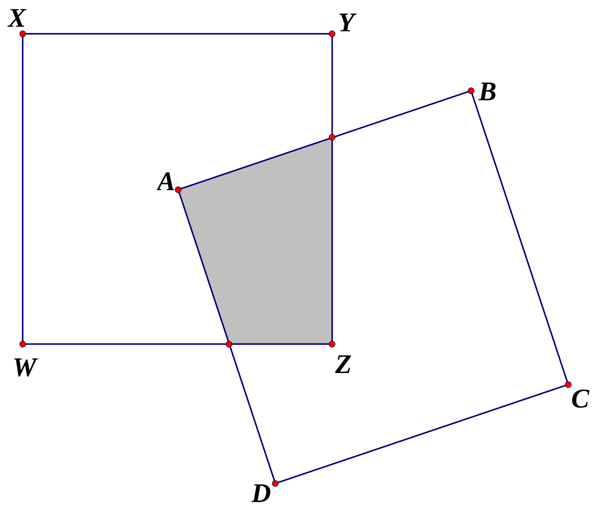
a =

2. 求 $b=\left[\log_2\left(a^2\right)+\log_4\left(\frac{1}{a^2}\right)\right]\times\left[\log_a 2+\log_{a^2}\left(\frac{1}{2}\right)\right]$ 的值。
Determine the value of $b=\left[\log_2\left(a^2\right)+\log_4\left(\frac{1}{a^2}\right)\right]\times\left[\log_a 2+\log_{a^2}\left(\frac{1}{2}\right)\right]$.

b =

3. 在下圖中，正方形 $ABCD$ 及 $XYZW$ 相等而且互相交疊使得頂點 A 位在 $XYZW$ 的中心及綫段 AB 將綫段 YZ 邊分為 1 : 2。若 $XYZW$ 的面積與交疊部分的面積比率為 c : 1，求 c 的值。
In the figure below, identical squares $ABCD$ and $XYZW$ overlap each other in such a way that the vertex is at the centre of $XYZW$ and the line segment AB cuts line segment YZ into 1 : 2. If the ratio of the area of $XYZW$ to the overlapped region is c : 1, determine the value of c .

c =



4. 若 76 與 d 的最小公倍數(L.C.M.)為 456 及 76 與 d 的最大公因數(H.C.F.)為 c，求正整數 d 的值。
If the least common multiples (L.C.M.) of 76 and d is 456 and the highest common factor (H.C.F.) of 76 and d is c, determine the value of the positive integer d.

d =

FOR OFFICIAL USE

Score for accuracy		×	Mult. factor for speed		=		Team No.	
			+	Bonus score			Time		
			Total score				Min.	Sec.

Hong Kong Mathematics Olympiad (2015 – 2016)
Final Event 3 (Individual)

Unless otherwise stated, all answers should be expressed in numerals in their simplest form.
除非特別聲明，答案須用數字表達，並化至最簡。

1. 若 $f(x) = x^4 + x^3 + x^2 + x + 1$，求 $f(x^5)$ 除以 $f(x)$ 的餘值 a。
If $f(x) = x^4 + x^3 + x^2 + x + 1$, determine the remainder a of $f(x^5)$ divided by $f(x)$.

$a =$

2. 設 n 為整數。求 $n^a - n$ 除以 30 的餘值 b。
Let n be an integer. Determine the remainder b of $n^a - n$ divided by 30 .

$b =$

3. 若 $0 < x < 1$，求

$$c = \left(\frac{\sqrt{1+x}}{\sqrt{1+x}-\sqrt{1-x}} + \frac{1-x}{\sqrt{1-x^2}+x-1}\right) \times \left(\sqrt{\frac{1}{x^2-b^2}-1} - \frac{1}{x-b}\right)$$

的值。
If $0 < x < 1$, determine the value of

$$c = \left(\frac{\sqrt{1+x}}{\sqrt{1+x}-\sqrt{1-x}} + \frac{1-x}{\sqrt{1-x^2}+x-1}\right) \times \left(\sqrt{\frac{1}{x^2-b^2}-1} - \frac{1}{x-b}\right).$$

$c =$

4. 若實數 x 及 y 滿足方程 $2\log_{10}(x + 2cy) = \log_{10} x + \log_{10} y$，求 $d = \frac{x}{y}$ 的值。
If real numbers x and y satisfy the equation $2\log_{10}(x + 2cy) = \log_{10} x + \log_{10} y$, determine the value of $d = \frac{x}{y}$.

$d =$

FOR OFFICIAL USE

Score for accuracy		×	Mult. factor for speed		=		Team No.	
			+	Bonus score			Time		
			Total score				Min.	Sec.

Hong Kong Mathematics Olympiad (2015 – 2016)
Final Event 4 (Individual)

Unless otherwise stated, all answers should be expressed in numerals in their simplest form.
除非特別聲明，答案須用數字表達，並化至最簡。

1. 若 m 和 n 為正整數及 $a=\log_2\left[\left(\frac{m^4n^{-4}}{m^{-1}n}\right)^{-3}\div\left(\frac{m^{-2}n^2}{mn^{-1}}\right)^5\right]$，求 a 的值。

   If m and n are positive integers and $a=\log_2\left[\left(\frac{m^4n^{-4}}{m^{-1}n}\right)^{-3}\div\left(\frac{m^{-2}n^2}{mn^{-1}}\right)^5\right]$,

   determine the value of a.

$a=$

2. 當整數 $1108+a$、1453、$1844+2a$ 及 2281 除以正整數 n (>1)都得相同餘數 b，求 b 的值。
   When the integers $1108+a$, 1453, $1844+2a$ and 2281 divided by some positive integer n (>1), they all get the same remainder b. Determine the value of b.

$b=$

3. 若 $\frac{6}{b}<x<\frac{10}{b}$，求 $c=\sqrt{x^2-2x+1}+\sqrt{x^2-6x+9}$ 的值。
   If $\frac{6}{b}<x<\frac{10}{b}$, determine the value of $c=\sqrt{x^2-2x+1}+\sqrt{x^2-6x+9}$.

$c=$

4. 求 $1+3^c+(3^c)^2+(3^c)^3+(3^c)^4$ 除以 $1+3+3^2+3^3+3^4$ 的餘值 d。
   Determine the remainder d when $1+3^c+(3^c)^2+(3^c)^3+(3^c)^4$ is divided by $1+3+3^2+3^3+3^4$.

$d=$

FOR OFFICIAL USE

Score for accuracy		×	Mult. factor for speed		=		Team No.		
			+	Bonus score			Time		
				Total score				Min.	Sec.

Hong Kong Mathematics Olympiad (2015– 2016)
Final Event 1 (Group)

Unless otherwise stated, all answers should be expressed in numerals in their simplest form.
除非特別聲明，答案須用數字表達，並化至最簡。

1. 一項工程包括三個項目：A、B 和 C。若項目 A 開始三天後，項目 B 才可開始進行。項目 C 亦必須在項目 B 開始四天後才可開始進行。若完成項目 A、B 和 C 分別需要四天、六天和五天，求最少天數 (P) 完成全項工程。
A project comprises of three tasks, A, B and C. Suppose task B must begin 3 days later than task A begins, and task C must begin 4 days later than task B begins. If the numbers of days to complete tasks A, B and C are 4, 6 and 5, respectively, determine the least number of days (P) to complete the project.

$P =$

2. 指示牌牌上掛有紅、黃、綠閃燈。紅、黃、綠閃燈分別每隔 3 秒、4 秒、8 秒閃爍一次。當 0 秒時，紅、黃、綠閃燈同時閃爍。若當 Q 秒時，第三次出現只有紅及黃閃燈同時閃爍，求 Q 的值。
There are 3 blinking lights, red, yellow and green, on a panel. Red, yellow and green lights blink at every 3, 4 and 8 seconds, respectively. Suppose each light blinks at the time $t = 0$. At time Q (in seconds), there is the third time at which only red and yellow lights blink, determine the value of Q .

$Q =$

3. 設 $f_{n+1} = \begin{cases} f_n + 3 & 若\ n\ 是雙數 \\ f_n - 2 & 若\ n\ 是單數 \end{cases}$。

若 $f_1 = 60$，求 n 的最少可能值，令當 $m \ge n$ 時，滿足 $f_m \ge 63$。

Let $f_{n+1} = \begin{cases} f_n + 3 & \text{if } n \text{ is even} \\ f_n - 2 & \text{if } n \text{ is odd} \end{cases}$.

If $f_1 = 60$, determine the smallest possible value of n satisfying $f_m \ge 63$ for all $m \ge n$.

$n =$

4. 求 $T = \left(3^{2^0}+1\right)\times\left(3^{2^1}+1\right)\times\left(3^{2^2}+1\right)\times\cdots\times\left(3^{2^{10}}+1\right)$ 的值。(答案以指數表示。)
Determine the value of $T = \left(3^{2^0}+1\right)\times\left(3^{2^1}+1\right)\times\left(3^{2^2}+1\right)\times\cdots\times\left(3^{2^{10}}+1\right)$.
(Leave your answer in index form.)

$T =$

FOR OFFICIAL USE

Score for accuracy		× Mult. factor for speed		=		Team No.	
		+ Bonus score				Time	
		Total score				Min.	Sec.

Hong Kong Mathematics Olympiad (2015 – 2016)
Final Event 2 (Group)

Unless otherwise stated, all answers should be expressed in numerals in their simplest form.
除非特別聲明，答案須用數字表達，並化至最簡。

1. 一個盒子有五個球，球面上分別印上號碼 3、4、6、9 或 10。由盒中同時隨機取出 2 個球，並得出其號碼的總和。若 A 為不同總和的數量，求 A 的值。
A box contains five distinctly marked balls with number markings being 3, 4, 6, 9 or 10. Two balls are randomly drawn without replacement from the box.
If A is the number of possible distinct sums of the selected numbers, determine the value of A.

$A =$

2. 設 $f_1 = 9$ 及 $f_n = \begin{cases} f_{n-1} + 3 & \text{若 } n \text{ 是3的倍數} \\ f_{n-1} - 1 & \text{若 } n \text{ 不是3的倍數} \end{cases}$。
若 B 為 k 的值的可能數量，使得 $f_k < 11$，求 B 的值。

Let $f_1 = 9$ and $f_n = \begin{cases} f_{n-1} + 3 & \text{if } n \text{ is a multiple of } 3 \\ f_{n-1} - 1 & \text{if } n \text{ is not a multiple of } 3 \end{cases}$.
If B is the number of possible values of k such that $f_k < 11$, determine the value of B.

$B =$

3. 設 a_1、a_2、a_3、a_4、a_5、a_6 為非負整數，並滿足
$$\begin{cases} a_1 + 2a_2 + 3a_3 + 4a_4 + 5a_5 + 6a_6 = 26 \\ a_1 + a_2 + a_3 + a_4 + a_5 + a_6 = 5 \end{cases}。$$
若 c 為方程系統的解的數量，求 c 的值。

Let a_1, a_2, a_3, a_4, a_5, a_6 be non-negative integers and satisfy
$$\begin{cases} a_1 + 2a_2 + 3a_3 + 4a_4 + 5a_5 + 6a_6 = 26 \\ a_1 + a_2 + a_3 + a_4 + a_5 + a_6 = 5 \end{cases}.$$
If c is the number of solutions to the system of equations, determine the value of c.

$c =$

4. 設 d 及 f 為正整數及 $a_1 = 0.9$。若 $a_{i+1} = a_i^2$ 及 $\prod_{i=1}^{4} a_i = \frac{3^d}{f}$，求 d 的最小可能值。
Let d and f be positive integers and $a_1 = 0.9$. If $a_{i+1} = a_i^2$ and $\prod_{i=1}^{4} a_i = \frac{3^d}{f}$, determine the smallest possible value of d.

$d =$

FOR OFFICIAL USE

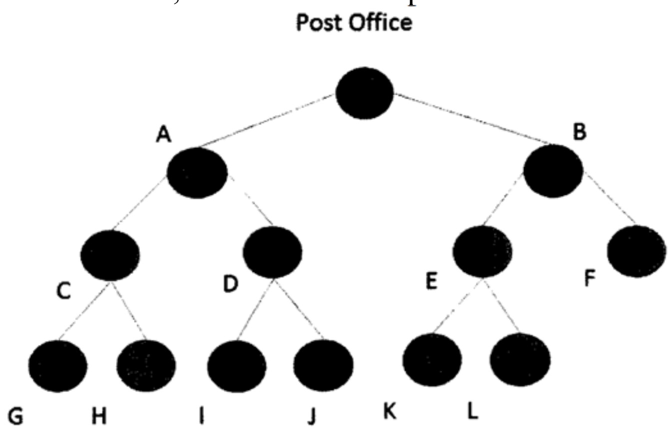
Score for accuracy		×	Mult. factor for speed		=		Team No.	
			+ Bonus score				Time		
			Total score				Min.	Sec.

Hong Kong Mathematics Olympiad (2015 – 2016)
Final Event 3 (Group)

Unless otherwise stated, all answers should be expressed in numerals in their simplest form.
除非特別聲明，答案須用數字表達，並化至最簡。

1. 下圖是郵差的送信路線圖：從郵局開始，到達十二個地點送信，最後返回郵局。若郵差從一地點步行到另一地點需要十分鐘及 K 為郵差需要的時數來完成整天路線，求 K 的最小可能值。
The figure below represents routes of a postman. Starting at the post office, the postman walks through all the 12 points and finally returns to the post office. If he takes 10 minutes from a point to another adjacent point by walk and K is the number of hours required for the postman to finish the routes, find the smallest possible value of K.

$K =$



2. 若 n 為正整數，$a_1 = 0.8$ 及 $a_{n+1} = a_n^2$，求 L 的最小值，滿足 $a_1 \times a_2 \times \cdots \times a_L < 0.3$。
If $a_1 = 0.8$ and $a_{n+1} = a_n^2$ for positive integers n,
determine the least value of L satisfying $a_1 \times a_2 \times \cdots \times a_L < 0.3$.

$L =$

3. 若方程 $\sqrt[3]{5+\sqrt{x}} + \sqrt[3]{5-\sqrt{x}} = 1$，求實數根 x。
Solve $\sqrt[3]{5+\sqrt{x}} + \sqrt[3]{5-\sqrt{x}} = 1$ for real number x .

$x =$

4. 若 a、b 及 y 為實數，並滿足 $\begin{cases} a+b+y=5 \\ ab+by+ay=3 \end{cases}$，求 y 的最大值。
If a, b and y are real numbers and satisfy $\begin{cases} a+b+y=5 \\ ab+by+ay=3 \end{cases}$,
determine the greatest possible value of y .

$y =$

FOR OFFICIAL USE

Score for accuracy		×	Mult. factor for speed		=		Team No.	
			+	Bonus score			Time	
				Total score			Min.	Sec.

Hong Kong Mathematics Olympiad (2015 – 2016)
Final Event 4 (Group)

Unless otherwise stated, all answers should be expressed in numerals in their simplest form.
除非特別聲明，答案須用數字表達，並化至最簡。

1. 若 a 及 b 為整數，且 a^2 與 b^2 相差 144，求 $d = a + b$ 的最大值。
Let a and b are two integers and the difference between a^2 and b^2 is 144, determine the largest possible value of $d = a + b$.

$d =$

2. 若 n 為整數，n^2 的個位及 10 位分別為 u 及 7，求 u 的值。
If n is an integer, and the units and tens digits of n^2 are u and 7, respectively, determine the value of u.

$u =$

3. 求實數 $c = \dfrac{\left(4+\sqrt{15}\right)^{\frac{3}{2}} + \left(4-\sqrt{15}\right)^{\frac{3}{2}}}{\left(6+\sqrt{35}\right)^{\frac{3}{2}} - \left(6-\sqrt{35}\right)^{\frac{3}{2}}}$ 的值。

Determine the value of real number $c = \dfrac{\left(4+\sqrt{15}\right)^{\frac{3}{2}} + \left(4-\sqrt{15}\right)^{\frac{3}{2}}}{\left(6+\sqrt{35}\right)^{\frac{3}{2}} - \left(6-\sqrt{35}\right)^{\frac{3}{2}}}$.

$c =$

4. 求下列方程 $x = 1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{x}}}}$ 的正實數解。

Determine the positive real root of the following equation: $x = 1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{x}}}}$.

$x =$

FOR OFFICIAL USE

Score for accuracy		×	Mult. factor for speed		=		Team No.		
			+	Bonus score			Time		
			Total score					Min.	Sec.

成績 Results

School code	School Name	Ind Event 1	Event 2	Event 3	Event 4
FE-01	Baptist Lui Ming Choi Secondary School	0	8	2	1
FE-02	Bishop Hall Jubilee School	1	5	2	0
FE-03	Buddhist Sin Tak College	2	2	2	1
FE-04	Carmel Pak U Secondary School	3	6	0	7
FE-05	Carmel Secondary School	1	6	3	1
FE-06	CCC Heep Woh College	3	4	0	1
FE-07	Cheung Chuk Shan College	1	2	4	1
FE-08	The Chinese Foundation Secondary School	1	2	0	1
FE-09	Chiu Lut Sau Memorial Secondary School	6	30	5	1
FE-10	CNEC Christian College	0	2	2	0
FE-11	Diocesan Boys' School	0	0	1	9
FE-12	G.T. (Ellen Yeung) College	0	8	9	9
FE-13	Good Hope School	6	4	2	1
FE-14	HKTA Tang Hin Memorial Secondary School	0	4	0	7
FE-15	Hoi Ping Chamber of Commerce Secondary School	2	4	2	1
FE-16	Hong Kong Baptist University Affiliated School Wong Kam Fai Secondary and Primary School	1	0	1	1
FE-17	Hong Kong Chinese Women's Club College	30	6	2	1
FE-18	King's College	5	4	2	1
FE-19	La Salle College	6	8	3	6
FE-20	Maryknoll Convent School (Secondary Section)	0	6	4	1
FE-21	Munsang College (Hong Kong Island)	3	1	2	1
FE-22	NTHYK Yuen Long District Secondary School	0	1	2	1
FE-23	PLK Centenary Li Shiu Chung Memorial College	2	2	2	1
FE-24	PLK No. 1 WH Cheung College	6	6	3	1
FE-25	PLK Tang Yuk Tien College	2	0	0	1
FE-26	Pui Ching Middle School	8	6	2	3

成績 Results

FE-27	Pui Kiu College	0	0	2	3	5	14	8			22	27	25
FE-28	Queen Elizabeth School	0	1	2	1	4	7	7			14	18	35
FE-29	Queen's College	1	0	2	8	11	4	30			34	45	11
FE-30	Sha Tin Government Secondary School	1	6	2	0	9	7	2			9	18	35
FE-31	Sha Tin Methodist College	1	0	0	1	2	0	4			4	6	49
FE-32	Shatin Tsung Tsin Secondary School	1	1	3	4	9	4	4			8	17	38
FE-33	Sing Yin Secondary School	0	30	2	5	37	4	7			11	48	9
FE-34	SKH Bishop Mok Sau Tseng Secondary School	0	1	0	6	7	4	4			8	15	43
FE-35	SKH Lam Woo Memorial Secondary School	0	3	0	3	6	14	4			18	24	27
FE-36	SKH Tsang Shiu Tim Secondary School	0	1	1	0	2	8	8			16	18	35
FE-37	South Island School	0	4	2	1	7	7	7			14	21	31
FE-38	St Joseph's College	1	8	9	1	19	30	4			34	53	8
FE-39	St Paul's Co-Educational College	40	4	2	5	51	4	7			11	62	5
FE-40	St Paul's College	1	3	2	3	9	4	4			8	17	38
FE-41	St Stephan's College	3	1	2	0	6	4	0			4	10	48
FE-42	STFA Lee Shau Kee College	1	6	2	0	9	14	7			21	30	22
FE-43	STFA Leung Kau Kui College	0	0	2	1	3	30	4			34	37	16
FE-44	Tsuen Wan Public Ho Chuen Yiu Memorial College	0	8	0	0	8	7	30			37	45	11
FE-45	Tuen Mun Catholic Secondary School	0	0	2	1	3	4	7			11	14	44
FE-46	TWGH Kap Yan Directors' College	6	6	0	6	18	4	6			10	28	23
FE-47	Wah Yan College, Hong Kong	2	2	10	6	20	8	7			15	35	19
FE-48	Wong Shiu Chi Secondary School	2	1	4	4	11	0	6			6	17	38
FE-49	Ying Wa College	12	16	3	6	37	14	30			44	81	3
FE-50	Yuen Long Merchant Association Secondary School	3	3	2	3	11	40	7			47	58	6

Champion	La Salle College
1st runner up	Ying Wa College
2nd runner up	St Paul's Co-Educational College