

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1 廿四 Let $f: D \rightarrow C$ be an injective analytic function from the unit disk to the plane. Then its image must contain a ball of radius $\frac{1}{4}$.	2 廿五 Ann and Ben are playing a game where they take turns to take 1 – 6 candies from a jar of 100 candies. The person taking the last candy wins. If Ann goes first, how many candies should she take?
3 廿六 What is the number of powers in Fibonacci numbers?	4 清明節 Today is the Square Root Day.	5 廿八 $OABC$ is a tetrahedron with $OA = \sqrt{10}$, $OB = 4$ and $OC = 5$. $\angle AOB = \angle AOC = 45^\circ$ and $\angle BOC = 60^\circ$. Find its volume.	6 廿九 Do you know that 6 is the smallest positive that has 4 distinct factors!	7 三月 7 is the first Carol prime.	8 初二 There are 8 integral points on $y^2 = x^3 + 17$.	9 初三 Sum of cubes of 3 consecutive integers is always a multiple of 9.
10 初四 Given that $\cos 36^\circ = \frac{a + \sqrt{b}}{c}$, find $a + b + c$.	11 初五 11 is the largest known multiplicative persistence.	12 初六 If a, b, c are real numbers such that $a^2 + 2b = 6$, $b^2 + 4c = -8$, $c^2 + 6a = -12$, find $-2(a + b + c)$.	13 初七 There are 13 Archimedean solids.	14 初八 Find the number of ways to partition a hexagon into four triangles.	15 初九 Today is the 308 th birthday of Leonhard Euler.	16 初十 Given that 11 divides $98a654b21$, find the maximum possible value of $a + b$.
17 十一 17 is a Fermat prime.	18 十二 A triangle has area 27 and in-radius 3. Find its perimeter.	19 穀雨 The cyclic quadrilateral $ABCD$ has $AB = BC = CD$. If $\angle ABD = 123^\circ$ and $\angle BAC = x^\circ$, find x .	20 十四 The average of 12 numbers is 60 and the average of 60 other numbers is 12. Find the average of all 72 numbers.	21 十五 If $\tan A + \tan B = 3$ and $\cot A + \cot B = 7$, find $4 \tan(A + B)$.	22 十六 How many times do clock's hands meet in a day?	23 十七 23 is a fortunate number.
24 十八 24 is the smallest positive integer with exactly 8 divisors.	25 十九 Find X if $\sqrt{\sqrt[3]{5} - \sqrt[3]{4}} = \frac{\sqrt[3]{2} + \sqrt[3]{20} - \sqrt[3]{X}}{3}$.	26 二十 26 is the smallest non-palindrome whose square is a palindrome.	27 廿一 $(3^3 + 18^3 + 24^3)^{\frac{1}{3}} = ?$	28 廿二 How many convex uniform honeycombs exist?	29 廿三 Today is the 161 st birthday of Henri Poincare.	30 廿四 Today is the 239 th birthday of John Carl Friedrich Gauss.



第五十七屆國際數學奧林匹克
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