

SUN 日	MON 一	TUE 二	WED 三	THU 四	FRI 五	SAT 六
MAR 三月 2011	<p>If you have a cylinder with radius "z" and height "a", then what is the volume?</p> <p>A: Pizza</p> <p>Q: Well, someone finally put it into picture format.</p>	<p>Let $x = 1 \times 2011 + 2 \times 2011 + 3 \times 2011 + \dots + 2011 \times 2011$, what is the remainder when x is divided by 5?</p>	<p>若 $x + \frac{1}{x} = 1$, 求 $x^6 + \frac{1}{x^6}$ 的值。</p>	<p>Birthday of Georg Ferdinand Ludwig Philipp Cantor (1845-1918). Cantor was a mathematician, best known as the creator of set theory. Cantor's Theorem stated that no function from a set to its power set can possibly be surjective, which established an infinite sequence of increasing infinities.</p>	<p>If n is an integer and $n^2 + n + 7$ is a perfect square, how many possible values of n are there?</p>	<p>Find the 2010th decimal place of the quotient $\frac{5}{7}$.</p>
<p>If α and β are the real roots of the quadratic equation $x^2 - ax + b = 0$, and α^3 and β^3 are also the real roots of the same quadratic equation, how many possible equations are there?</p>	<p>Given that $a - b = 3$ and $b - c = 5$. Find \sqrt{x} if $x = a^2 + b^2 + c^2 - ab - bc - ac$.</p>	<p>現有三個整數成遞增等比數列，其和為14，其平方和為4096，求數列尾項。</p>	<p>$ABCD$ is a parallelogram, $AM : MB = 1 : 2$ and $DN : NB = 3 : 1$. If the ratio of the area of $\triangle AMD$ to that of $\triangle NCD$ is $4 : n$, what is n?</p> 	<p>If there are 2^n digits in the number 234^{432}, what is n?</p>	<p>Let M and N be two events with $P(M \cup N) = 0.75$ and $P(M \cap N') = 0.8$, where N' denotes the complement of event N. If $P(M) = \frac{k}{20}$, find k.</p>	<p>已知 $\sin \theta \cos \theta = \frac{1}{2}$, $0^\circ < \theta < 90^\circ$, 求 $96(\tan^2 \theta \cos^5 \theta + \cos^2 \theta \sin^3 \theta)^2$ 的值。</p>
<p>已知 $px^3 + qx^3 + 13x$ 可被 $x^2 + x + 4$ 整除，求 $2(p + q)$ 的值。</p>	<p>A ball is drawn at random from a box containing one black ball and two yellow balls. If the ball is black, it will be put back in the bag along with one more black ball. If the ball is yellow, it will be put back to the bag with two additional yellow balls. If the probability that the second ball drawn is yellow is M, find the value of $20M$.</p>	<p>The sum of all digits of 1977 is $1 + 9 + 7 + 7 = 24$. Find the number of 4-digit numbers which are less than 2046 with the sum of digits being 24.</p>	<p>It is known that $\alpha^2 + \beta^2 = 11$ and $\frac{1}{\alpha + 3} + \frac{1}{\beta + 3} = 1$, where $\alpha + \beta$ are real. Find the value of $\alpha^3 + \beta^3$.</p>	<p>1, 2, 5, 10, x, 26, ... Find x.</p>	<p>用邊長為12單位的一條繩子與一足夠長的牆圍出一個長方形，求長方形面積的極大值。</p>	<p>In the diagram, O is the centre of the circle, AB is a diameter, $PAOBQ$ is a straight line and two perpendicular tangents PR and QR touch the circle at D and C respectively. If the radius of the circle is 12 and $BQ = 1$, find the length of PA (to the nearest integer).</p> 
<p>In the figure, $ABCD$ is a trapezium circumscribing a circle. $AD \parallel BC$ and $AB = CD$, E and F are mid-points of AB and DC respectively. If $EF = 5$, $AD : BC = 1 : 4$, find the area of $ABCD$. (Hint: $EF = AB$)</p> 	<p>Birthday of Jean Baptiste Joseph Fourier. Known for the investigation of Fourier series and their applications to problems of heat flow, Fourier received his reputations in mathematics and physics. The Fourier transform is also named in his honour. He was also believed to discover the greenhouse effect.</p>	<p>The prime numbers a and b satisfy the equation $a + b = 13$, find their product.</p>	<p>Birthday of Pierre-Simon Laplace. Introduced to mathematics in Caen by Christophe Gadbled and Pierre Le Canu, he was mentored by d'Alembert in Paris. He went on to become one of the most innovative and influential scientists ever. (Laplacian, Laplace transform, etc.)</p>	<p>If $0.35\dot{1}$ is converted into a fraction in lowest terms, what is the difference between denominator and numerator?</p>	<p>A bag contains n black balls and 8 white balls. If two balls are drawn randomly from the bag one by one without replacement, then the probability that both balls are black is $\frac{5}{39}$. Find the value of n^2.</p>	<p>Find $\int_1^3 \frac{26 \ln x^x}{\ln(10x^2 - x^4)} dx$.</p> <p>Note: $\int_a^b \frac{\ln x^x}{\ln[(a^2 + b^2)x^2 - x^4]} dx = \frac{b^2 - a^4}{8}$ for non-negative a and b.</p>
<p>$\frac{A B C D E F}{\times \quad \quad \quad 7}$ $\frac{G G G G G G}{\quad \quad \quad \quad \quad}$</p> <p>求 $A + B + C + D + E + F$ 的值。</p>	<p>Let x, y be positive integers such that $\sqrt{x - 114} + \sqrt{x + 110} = 4y$. Find the maximum value of y.</p>	<p>Let $A(0, 5)$ and $B(21, 15)$ be two points on the rectangular coordinate plane. Find the minimum value of $AX + BX$ where X is a point on the x-axis.</p>	<p>There are a number of rabbits and chickens in a farm. The total number of heads and the total number of feet are 70 and 200 respectively. How many rabbits are there?</p>	<p>Birthday of René Descartes. Descartes' influence in mathematics is apparent: the Cartesian coordinate system allowing geometric shapes to be expressed in algebraic equations was named after him. He was accredited as the father of analytic geometry. Descartes was also one of the key figures in the Scientific Revolution.</p>		
<p>27 廿三</p>	<p>28 廿四</p>	<p>29 廿五</p>	<p>30 廿六</p>	<p>31 廿七</p>		

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