

1%	mathongo /// mathongo /// mathongo // mathongo	mathongo /// mathongo /// mathongo /// mathongo /// n ≤ 15. If the sum of the coefficients of the remaining terms in the expansion is 649 and
	\ x-/	
14.	the coefficient of $x^{-n}$ is $\lambda \alpha$ , then $\lambda$ is equal to	
2.	The number of integral terms in the expansion of $(3^{\frac{\pi}{2}} + 5^{\frac{\pi}{4}})$ is equal to	
3.	If the $1011^{\text{th}}$ term from the end in the binomial expansion of $\left(\frac{4x}{5} - \frac{5}{2x}\right)^{202}$	is $1024$ times $1011^{\text{th}}$ term from the beginning, then $32 x $ is equal to
	(1) 15	(2) 10
4.	(3) 12 mathongo /// mathongo /// mathongo /// yathongo	(4) 8 /// mathongo /// mathongo /// mathongo /// mathongo ///
	If the constant term in the binomial expansion of $\left(\frac{x^2}{2} - \frac{4}{x^l}\right)$ is $-84$ and	the coefficient of $x^{-3l}$ is $2^{\alpha}\beta$ where $\beta<0$ is an odd number, then $ \alpha l-\beta $ is equal to
	mathongo /// mathongo /// mathongo /// mathongo	/// mathongo /// mathongo /// mathongo /// mathongo /// n $+x^{500}$ is:
5.	The coefficient of $x^{301}$ in $(1+x)^{900} + x(1+x)^{409} + x^2(1+x)^{400} + \dots$ (1) $^{501}C_{302}$	$+x^{500}$ is: (2) $^{500}C_{301}$
		(4) $^{501}C_{200}$ 130 $^{\prime\prime\prime}$ mathong $^{\prime\prime\prime}$ mathong $^{\prime\prime\prime}$ mathong $^{\prime\prime\prime}$ mathong $^{\prime\prime\prime}$ n
	Let the coefficients of three consecutive terms in the binomial expansion of middle of these three terms, is	$(1+2x)^n$ be in the ratio $2:5:8$ . Then the coefficient of the term, which is in the
7.	The term independent of $x$ in the expression of $(1-x^2+3x^3)(\frac{5}{2}x^3-\frac{1}{5x^2})$	$x^{-1}$ , $x \neq 0$ is /// mathongo /// mathongo /// mathongo /// mathongo /// mathongo
	$(1) \frac{7}{40}$	(2) $\frac{33}{200}$
14.		/(4) $\frac{11}{50}$ thongo /// mathongo /// mathongo /// mathongo /// n
8.		In the expansion of $\left(\sqrt[4]{2} + \frac{1}{\sqrt[4]{3}}\right)^n$ is $\sqrt{6}$ : 1, then the third term from the beginning
	is: athogo (1) $30\sqrt{2}$ mathongo (1) mathon	(2) $30\sqrt{3}$ mathongo /// mathongo /// mathongo /// mathongo
	$(3) 60\sqrt{2}$	$(4) 60\sqrt{3}$
9.	If the coefficient of $x^{15}$ in the expansion of $\left(ax^3 + \frac{1}{bx^{\frac{1}{3}}}\right)^{15}$ is equal to the	coefficient of $x^{-15}$ in the expansion of $\left(ax^{\frac{1}{3}}-\frac{1}{bx^3}\right)^{15}$ , where $a$ and $b$ are positive
	real numbers, then for each such ordered pair $(a, b)$ :	
	(1) $a = bgo$ /// mathongo /// mathongo /// mathongo /// mathongo	(2) $ab = 1 \log 2$ // mathongo // mathongo // mathongo // n (4) $ab = 3$
10.	Let the sum of the coefficient of first three terms in the expansion of $(x - \frac{1}{2})^{n}$	
	The coefficient of $x^{101}$ in the expression	x²/ mathanga  //. mathonga  //. mathonga  //. mathonga  //. n
	$(5+x)^{500}+x(5+x)^{499}+x^2(5+x)^{498}+\ldots\ldots+x^{500}, x>0$ is	
	(1) $^{501}C_{101} \times 5^{399}$ mathongo /// mathongo /// mathongo	(2) ${}^{501}C_{101} \times 5^{400}$ mathongo // mathongo
12	(3) $^{501}C_{100} \times 5^{400}$ The ratio of the coefficient of the middle term in the expansion of $\left(1+x\right)^2$	(4) $^{500}C_{101} \times 5^{399}$ ond the sum of the coefficients of two middle terms in expansion of $(1+x)^{19}$ is
14.	mathons	and the sum of the coefficients of two middle terms in expansion of $\left(1+x\right)^{19}$ is
13.	The coefficient of $x^{18}$ in the product $(1+x)(1-x)^{10}ig(1+x+x^2ig)^9$ is	
	(1) 84 ongo /// mathongo /// mathongo /// mathongo	(4) 196 /// mathongo /// mathongo /// mathongo /// n
14.	(3) $-126$ The remainder when $7^{2022} + 3^{2022}$ is divided by 5 is	(4) 126
14.		/(2) 2 athongo ///. mathongo ///. mathongo ///. mathongo ///. n
	(3) 3	(4) 4
15.	The remainder when $(2021)^{2023}$ is divided by 7 is $(1) 2$	$\binom{1}{(2)}$ $\binom{n}{3}$ athongo $\binom{n}{2}$ mathongo $\binom{n}{2}$ mathongo $\binom{n}{2}$ mathongo $\binom{n}{2}$
	(1) 2	(4) 5
16.	The remainder when $19^{200}+23^{200}$ is divided by 49, is	
17.	If $(2021)^{3762}$ is divided by 17, then the remainder is	
18.	If the fractional part of the number $\frac{2^{403}}{15}$ is $\frac{k}{15}$ , then $k$ is equal to	$^{\prime\prime}_{(2)}$ r $_{14}$ thongo $^{\prime\prime\prime}$ mathongo $^{\prime\prime\prime}$ mathongo $^{\prime\prime\prime}$ mathongo $^{\prime\prime\prime}$ n
	(1) 4 mathongo // mathongo // mathongo // mathongo //	(4) 6



19.	Among the statements: though mathong with mathon $(S1): 2023^{2022} - 1999^{2022}$ is divisible by 8.		
	$(S2): 13(13)^n-11n-13$ is divisible by 144 for infinitely many $n\in\mathbb{N}$		
	(1) Only (S2) is correct hongo // mathongo // mathongo	(2) Only (S1) is correct athongo // mathongo // mathongo //	
	(3) Both (S1) and (S2) are correct	(4) Both (S1) and (S2) are incorrect	
20	The remainder when (2023) <sup>2023</sup> is divided by 35 is	(1) Both (81) and (82) are mediteet	
		// mathongo // mathongo // mathongo // mathongo //	
	If the remainder when $x$ is divided by 4 is 3, then the remainder when (2020)		
22.	Let $x = \left(8\sqrt{3} + 13\right)^{13}$ and $y = \left(7\sqrt{2} + 9\right)^{9}$ . If $[t]$ denotes the greatest into	$eger \leq t$ , then	
	(1) $[x]+[y]$ is even $\begin{bmatrix} y \\ y \end{bmatrix}$ mathons $\begin{bmatrix} y \\ y \end{bmatrix}$	(2) $[x]$ is odd but $[y]$ is even mathongo when mathongo when mathongo when $[x]$ is even mathon $[x]$ in $[x]$ is even mathon $[x]$ is even mathon $[x]$ in $[x]$ is even mathon $[x]$ in $[x]$ is even mathon $[x]$ in $[x]$ in $[x]$ in $[x]$ in $[x]$ in $[x]$ is even mathon $[x]$ in $[$	
	(3) $[x]$ is even but $[y]$ is odd	(4) $[x]$ and $[y]$ are both odd	
23.	The number of elements in the set $\{n\in\{1,2,3,\dots,100\}\mid\ (11)^n>(10)^n$	$+(9)^n$ } is	
24.	The coefficient of $x^7$ in $\left(1-x+2x^3\right)^{10}$ is		
	$(2m+1)^{1}$ $(2m+1)^{2}$ $(2m$		
	/		
26.	If the constant term in the expansion of $\left(3x^3 - 2x^2 + \frac{5}{x^5}\right)^{10}$ is $2^k$ , $l$ , where	l is an odd integer, then the value of $k$ is equal to  (2) $7$ mathongo	
	mathongo (1) 6 mathongo (1) mathongo (1) mathongo	(2) 7 mathongo (1/1.1 mathongo (1/1.2 mathongo	
	(3) 8	(4) 9	
27.	If $1 + (2 + {}^{49}C_1 + {}^{49}C_2 + \dots + {}^{49}C_{49})({}^{50}C_2 + {}^{50}C_4 + \dots + {}^{50}C_{50})$ is eq	qual to $2^n$ . $m$ , where $m$ is odd, then $n+m$ is equal to	
	Let $(1+x+2x^2)^{20}=a_0+a_1x+a_2x^2+\ldots+a_{40}x^{40}$ , then $a_1+a_3+a_5$		
	(1) $2^{20}(2^{20}-21)$	$(2) \ 2^{19}(2^{20}-21)$	
	(3) $2^{19}(2^{20} + 21)$ mathongo /// mathongo /// mathongo	(4) $2^{20}(2^{20}+21)$ // mathongo // mathongo // mathongo //	
29.	$\sum_{k=0}^{6} {}^{51-k}C_3$ is equal to		
		(2) 510 450	
		$(2)$ $C_3 - C_3$	
	$(3)$ ${}^{52}C_4 - {}^{45}C_4$ mathongo // mathongo // mathongo	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
		$ \begin{array}{c} (2)^{-51}C_3 - {}^{45}C_3 \\ (4)^{-52}C_3 - {}^{45}C_3 \end{array}                                   $	
	Let $m, n \in N$ and $gcd(2, n) = 1$ . If $30 \binom{30}{0} + 29 \binom{30}{1} + \dots + 2 \binom{30}{20}$	$+1\binom{30}{30}=n.2^m$ , then $n+m$ is equal to (Here $\binom{n}{k}={}^nC_k$ )	
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