9/21/23, 9:10 PM question_marks

Questions Sample Task

Questions with Answer Keys MathonGo If $a_1 + a_5 + a_{10} + a_{15} + a_{20} + a_{24} = 225$, then the sum of the first 24 terms of the arithmetic progression a_1, a_2, a_3, \ldots is equal to mathongo /// mathongo /// mathongo /// mathongo /// mathongo /// mathongo (1)450(2) 675athongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo (4) 1200If 2, 7, 9 and 5 are subtracted respectively from four numbers in geometric progression, then the resulting numbers are in arithmetic progression. The smallest of the four numbers is (1) -24 thongo /// mathongo /// mathongo /// mathongo /// mathongo (3)6mathongo /// mathongo /// mathongo /// mathongo /// mathongo /// mathongo If a, b & 3c are in arithmetic progression and a, b & 4c are in geometric progression, then the possible values of (1) $\left\langle \frac{2}{3}, 2 \right\rangle$ ongo /// mathongo /// mathongo /// mathongo /// mathongo $\binom{3}{2}$ $\left\{\frac{3}{2},\frac{1}{2}\right\}$ mathongo /// mathongo /// mathongo /// mathongo

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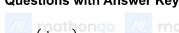
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Sample Task

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MathonGo



mathongo Math Questions

$$(4) \left\{ \frac{1}{2}, 2 \right\}$$

Let a_1, a_2, a_3 be three positive numbers which are in geometric progression with common ratio r. The inequality $a_3 > a_2 + 2a_1$ holds true if r is equal to

If
$$|x| < 1$$
, $|y| < 1$, the sum to infinity of the series $(x + y)$, $(x^2 + xy + y^2)$, $(x^3 + x^2y + xy^2 + y^3)$, Is -

$$(x+y), (x^2+xy+y^2), (x^2+xy+y^2)$$

$$(x^3 + x^2y + xy^2 + y^3), \dots$$
 Is

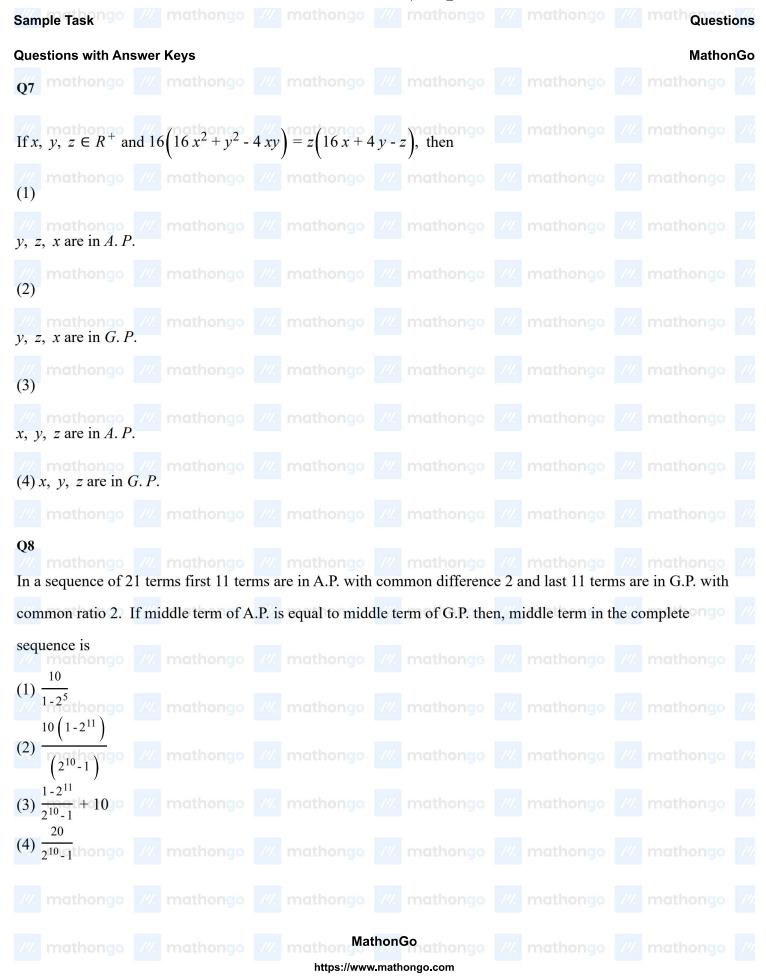
$$(1) \frac{x+y-xy}{1-x-y+xy}$$

$$\frac{x+y+xy}{1-x-y+xy}$$
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(3)
$$\frac{x}{1-x} + \frac{y}{1-y}$$

$$1 - x - y + xy$$

If |3x - 1|, 3, |x - 3| are the first three terms of an arithmetic progression, then the sum of the first five terms can be



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If a_1, a_2, \dots, a_{10} are positive numbers in an arithmetic progression such that $\frac{1}{a_1 a_2} + \frac{1}{a_2 a_3} + \dots + \frac{1}{a_9 a_{10}} = \frac{9}{64}$

and $\frac{1}{a_1 a_{10}} + \frac{1}{a_2 a_9} + \dots + \frac{1}{a_{10} a_1} = \frac{1}{10} \left(\frac{1}{a_1} + \dots + \frac{1}{a_{10}} \right)$, then sum of digits of $\left(4 \left(\frac{a_1}{a_{10}} + \frac{a_{10}}{a_1} \right) \right)$ is

Q10 mathongo /// mathongo /// mathongo /// mathongo /// mathongo

Three numbers a, b and c are in between 2 and 18 such that 2, a, b are in arithmetic progression and b, c, 18 are in geometric progression. If a + b + c = 25, then the value of c - a is

4 mathongo /// mathongo /// mathongo /// mathongo /// mathongo /// mathongo

(2) 3 mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo

(3)7

(4) omathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo

Q11

The harmonic mean of two positive numbers a and b is 4, their arithmetic mean is A and the geometric mean is

G. If $2A + G^2 = 27$, $a + b = \alpha$ and $|a - b| = \beta$, then the value of $\frac{\alpha}{\beta}$ is equal to mathongo

mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo (2) 3

 $\frac{3}{2}$ mathongo $\frac{3}{2}$ mathongo $\frac{3}{2}$ mathongo $\frac{3}{2}$ mathongo $\frac{3}{2}$ mathongo $\frac{3}{2}$ mathongo $\frac{3}{2}$

(4) 5 mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo

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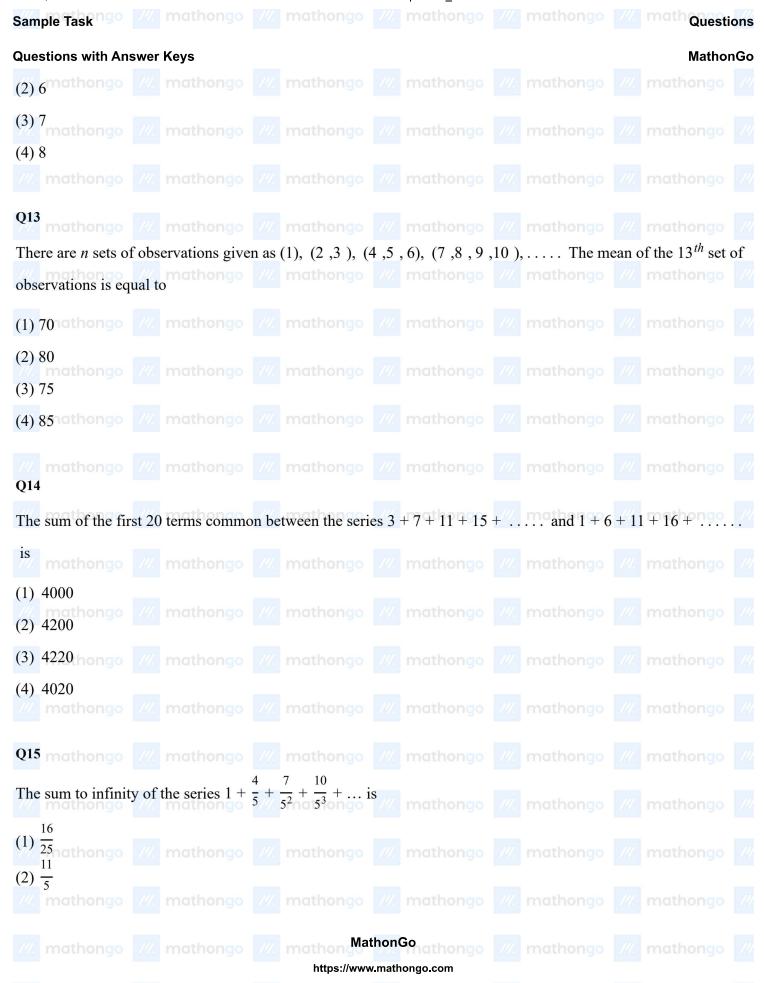
If 11 arithmetic means are inserted between 28 and 10, then the number of integral arithmetic means are onco

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 $(3) \frac{35_{\text{nathongo}}}{16}$

(4) Inathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo

The sum (upto two decimal places) of the infinite series $\frac{7}{17} + \frac{77}{17^2} + \frac{777}{17^3} + \dots$ is

(1) 1.06/thongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo

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(4) 4.06 thongo /// mathongo /// mathongo /// mathongo /// mathongo

It is given that $\frac{1}{1^4} + \frac{1}{2^4} + \frac{1}{3^4} + \dots = \frac{\pi^4}{90}$ then $\frac{1}{1^4} + \frac{1}{3^4} + \dots + \infty$ is equal to -

 $\frac{7}{12}$ π^4 nathongo $\frac{7}{12}$ mathongo $\frac{7}{12}$ mathongo $\frac{7}{12}$ mathongo $\frac{7}{12}$ mathongo $(1) \frac{}{96}$

 $\binom{2}{45} \frac{\pi_{\text{mathongo}}^4}{45}$ mathongo $\frac{1}{1}$ mathongo $\frac{1}{1}$ mathongo $\frac{1}{1}$ mathongo

(3) mathongo /// mathongo /// mathongo /// mathongo /// mathongo

(4) None of these

Q18 mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo

If $S = 1(25) + 2(24) + 3(23) + \dots + 24(2) + 25(1)$, then the value of $\frac{S}{900}$ is equal to

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m Q19}^{\prime\prime\prime}$ mathongo $^{\prime\prime\prime\prime}$ mathongo $^{\prime\prime\prime\prime}$ mathongo $^{\prime\prime\prime\prime}$ mathongo $^{\prime\prime\prime\prime}$ mathongo

 $0.2 + 0.22 + 0.222 + \dots$ upto *n* terms is equal to ongo /// mathongo /// mathongo ///

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$$(2) n \left(\frac{1}{9}\right) \left(1 - 10^{-n}\right)$$
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$$(3) \left(\frac{2}{9}\right) \left[n - \left(\frac{1}{9}\right) \left(1 - 10^{-n}\right)\right]$$
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We math
$$_3$$
ngo $_5$ math $_7$ ngo $_7$ mathongo $_8$ math

If
$$S = \sum_{n=1}^{9999} \frac{1}{\sqrt{n} + \sqrt{n+1}}$$
, then the value of S is equal to mathor $\left(\sqrt{n} + \sqrt{n+1}\right) \left(\sqrt[4]{n} + \sqrt[4]{n+1}\right)$ mathongo mathong

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If $S = \sum_{r=1}^{80} \frac{r}{\left(r^4 + r^2 + 1\right)}$, then the value of $\frac{6481S}{1000}$ is mathongo

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Q23 mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo ///. mathongo ///.

For the series $S = 1 + \frac{1}{(1+3)}(1+2)^2 + \frac{1}{(1+3+5)}(1+2+3)^2 + \frac{1}{(1+3+5+7)}(1+2+3+4)^2 + \dots$, if the sum

of the first 10 terms is K, then $\frac{4K}{101}$ is equal to

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Let the sum $\sum_{n} \frac{1}{n(n+1)(n+2)}$, written in the rational form be $\frac{p}{q}$ (where p and q are co-prime), then the value of

 $\left\lceil \frac{q-p}{10} \right\rceil$ is, (where [.] is the greatest integer function) // mathongo // mathongo //

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If $S_n = (1^2 - 1 + 1)(1!) + (2^2 - 2 + 1)(2!) + \dots + (n^2 - n + 1)(n!)$, then S_{50} is:

(1) 52 athongo /// mathongo /// mathongo /// mathongo /// mathongo /// mathongo

 $(2) 1 + 49 \times 51!$

(4) 50 × 51! 1 // mathongo // mathongo // mathongo // mathongo // mathongo

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Let a_1, a_2, \ldots, a_n be real numbers such that a_1, a_2, \ldots, a_n be real numbers of a_1, a_2, \ldots, a_n be real numbers of

 $\sqrt{a_1} + \sqrt{a_2 - 1} + \sqrt{a_3 - 2} + \dots + \sqrt{a_n - (n - 1)} = \frac{1}{2} \left(a_1 + a_2 + \dots + a_n \right) - \frac{n(n - 3)}{4}$. Compute the value of $\sum_{i=1}^{n} a_i$.

(1) 1010 mathongo /// mathongo /// mathongo /// mathongo /// mathongo /// mathongo ///

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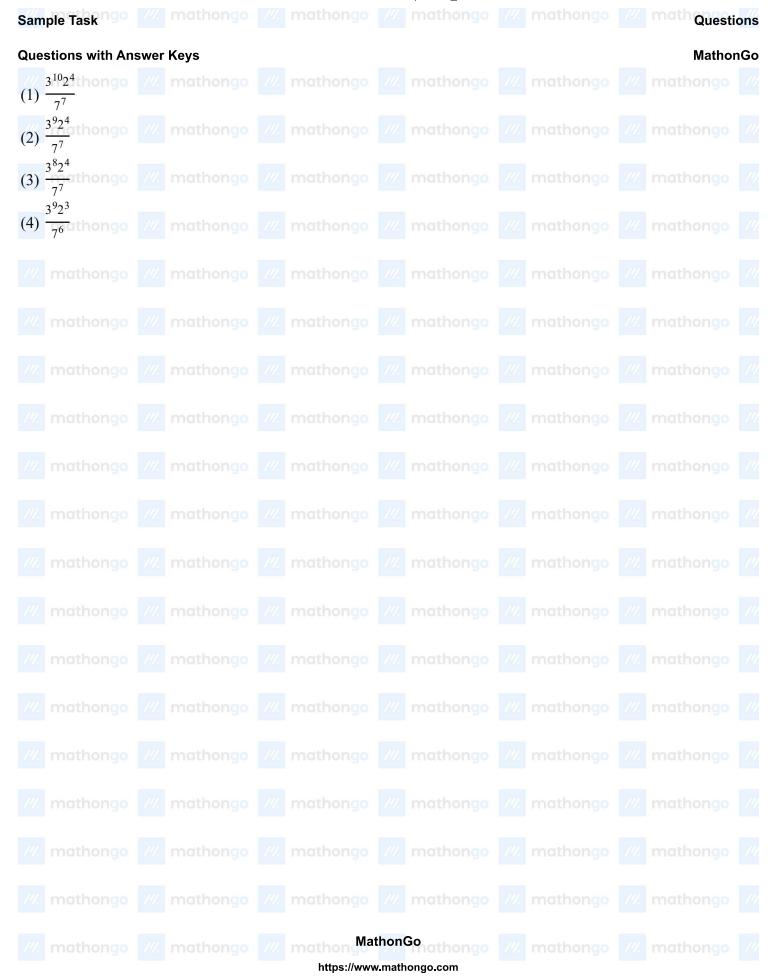
MathonGo

Let
$$a_1, a_2, a_3, \dots, a_{11}$$
 be real numbers satisfying $a_1 = 15, 27 - 2a_2 > 0$ and

$$\frac{1.2}{1!} + \frac{2.3}{2!} + \frac{3.4}{3!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{2.3}{2!} + \frac{3.4}{3!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{2.3}{2!} + \frac{3.4}{3!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{2.3}{2!} + \frac{3.4}{3!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{2.3}{2!} + \frac{3.4}{3!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{2.3}{2!} + \frac{3.4}{3!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{1.2}{2!} + \frac{3.4}{3!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{1.2}{2!} + \frac{3.4}{3!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{1.2}{2!} + \frac{3.4}{3!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{1.2}{3!} + \frac{3.4}{4!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{1.2}{3!} + \frac{3.4}{4!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{1.2}{3!} + \frac{3.4}{4!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{1.2}{3!} + \frac{3.4}{4!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{1.2}{3!} + \frac{3.4}{4!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{1.2}{3!} + \frac{3.4}{4!} + \frac{4.5}{4!} + \dots \infty = \frac{1.2}{1!} + \frac{1.2}{3!} + \frac{1.2}{3!} + \frac{1.2}{4!} + \frac{1.2}{3!} + \frac{1.$$

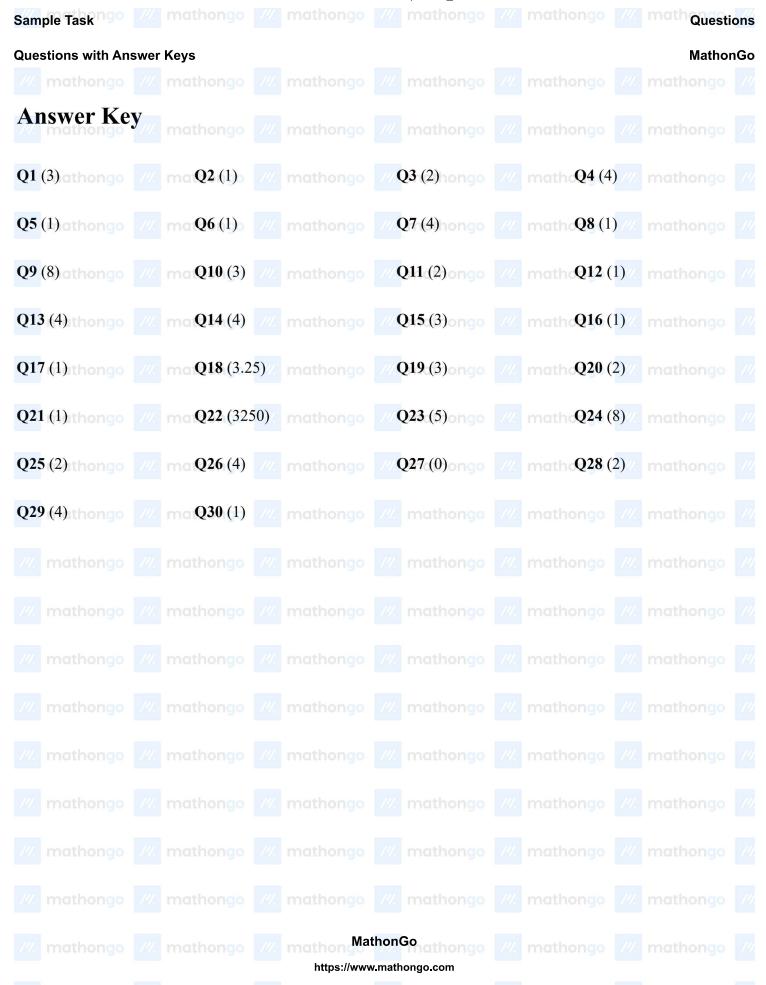
The minimum value of sum of real numbers a^{-6} , $2a^{-4}$, $2a^{-3}$, 1 and $2a^{10}$ with a > 0 is equal to

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