

Algebra I

* If S_1, S_2, S_3 are sum of $n, 2n, 3n$ terms of a G.P

respectively then $\frac{S_1(S_3-S_2)}{(S_2-S_1)^2}$ is

- a) 1 b) 2 c) 3 d) 4

Ans: a)

* If x is +ve real, then the numbers

$\frac{1}{1+\sqrt{x}}, \frac{1}{1-x}, \frac{1}{1-\sqrt{x}}$ are in

- a) AP b) GP
c) HP d) Not a sequence

Ans: a)

* Let $x|x-1|, |x+1|$ be first three terms of a G.P

then sum of series $\frac{1}{x} + \frac{1}{|x-1|} + \frac{1}{|x+1|} + \dots \dots \dots \infty$ is

- a) 9 b) $\frac{9}{2}$ c) 3 d) 6

Ans: d)

* $\frac{1}{1^2} + \frac{1}{2^2} + \frac{1}{3^2} + \dots \dots \dots = \frac{\pi^2}{6}$ then

$\frac{1}{1^2} + \frac{1}{3^2} + \frac{1}{5^2} + \dots \dots \dots = ?$

- a) $\frac{\pi^2}{6}$ b) $\frac{\pi^2}{3}$ c) $\frac{\pi^2}{8}$ d) $\frac{\pi^2}{12}$

Ans: c)

* Which number must be added to 13,15,19 so that resulting number must be in H.P

- a) 7 b) -7 c) 8 d) -8

Ans: b)

* The Value of

$$3+5+6+9+10+12+15+18+26+\dots+100$$

- a) 2418 b) 2481 c) 2814 d) 2186

Ans: a)

* The four GM's b/n 2 & 486 are

- a) 6, 18, 54, 162,
b) 4, 8, 32, 128
c) 8, 32, 128, 512
d) 6, 32, 54, 162

Ans: a)

* The product of 3GM's n/w 4 & $\frac{1}{4}$ is

- a) 16 b) 8 c) 2 d) 1

Ans: d)

* Total no of four digit odd numbers that can be formed using 0.1.2.3.5.7 are

- a) 6! b) 5! c) 6x6! d) 5x5!

Ans: a)

$$* \left[\sum_{r=1}^n \frac{{}^n P_r}{r} \right]^2 =$$

- a) 2^n b) 4^n c) 3^n d) 2^{n+1}

Ans: b)

$$* {}^{30}C_{r+2} = {}^{30}C_{r-2} \text{ then 'r' equals to}$$

- a) 8 b) 15 c) 30 d) 32

Ans: b)

* There are 10 true - false questions in an examination then these questions can be answered in

- a) 100 ways b) 20 ways
c) 512 ways d) 1024 ways

Ans: d)

* In an exam there are 3 MCQ's each question has 4 choices number of ways in which a student can fail to get all answers correct is

- a) 11 b) 12 c) 64 d) 63

Ans: d)

* Four students of class IV, Five students of class V, six students of class VI. sit in a row, no of ways they can sit in a row so that students belonging to same class sit together is

- a) ${}^3P_3 {}^4P_4 {}^5P_5 {}^6P_6$ b) ${}^3P_3 {}^4P_4 {}^5P_5$
c) ${}^3P_3 ({}^4P_4)^2 {}^5P_5$ d) $({}^5P_5)^2 {}^3P_3 {}^4P_4$

Ans: a)