Sequences & Series Test

V. Arithmetic and Geometric means

A) Find the following

1) 3 and 9 arithmetic mean:

2) 3 and 48 all possible geometric means:

VI. Geometric Series: convergence/divergence

A) Determine whether the following geometric series converge or diverge. then, find the limit of convergence (if it exists).

1) $30 + 27 + \ldots$

2) $10 + 13 + \ldots$

B) Write $.27\overline{27}$ as an infinite geometric series; Then, express $.27\overline{27}$ as a fraction.

C) What is the interval of convergence for the following geometric series ?

$$\sum_{n=1}^{\infty} = \left(\frac{X-2}{3}\right)^n$$

D) Answer the following:

1) Evaluate S_∞ for 1/2, 1/4, 1/8, 1/16, ...

2) $\sum_{n=1}^{\infty} (1.001)^n =$

3) $\sum_{n=1}^{\infty} 3 - \left(\frac{2}{3}\right)^n =$

4) $\sum_{n=1}^{\infty} 3\left(\frac{2}{3}\right)^n =$