Name: _____

Per: ____

Quiz #8 SV

(9.4 & 9.5)

Show your work *Calculator okay*

Write out the first five terms of the sequence.

1) $a_n = n^2 - n$ 1) _____

A) 1, 4, 9, 16, 25 B) 2, 6, 12, 20, 30 C) 0, 3, 8, 15, 24 D) 0, 2, 6, 12, 20

Find the first six terms of the sequence.

2) $a_1 = -9, a_n = 5 \cdot a_{n-1}$ 2) _____

A) −9, −45, −40, −35, −30, −25

B) −45, −225, −1125, −5625, −28,125, −140,625

C) −9, −45, −225, −1125, −5625, −28,125

D) 0, 5, −45, −40, −35, −30

3) $\sum_{m=-2}^{1} \frac{m+3}{2}$ 3) _____

Find an explicit rule for the nth term of the sequence.

4) 8, −8, 8, −8, ... 4) _____

Write the series using summation notation.

5) 7 − 35 + 175 − 875 + ... 5) _____

A) $\sum_{n=0}^{\infty} 7 \cdot 5^{n+1}$ B) $\sum_{n=0}^{\infty} 7(-5)^n$ C) $\sum_{n=0}^{\infty} 7 \cdot 5^n$ D) $\sum_{n=0}^{\infty} 7(-5)^{n+1}$

6) **State the following (explicit) formulas.** 6) _____

Finite Geometric Series $S_n =$

Arithmetic Sequence $a_n =$

Geometric Sequence $a_n =$

Arithmetic Series $S_n =$

Infinite Geometric Series $S =$

Find a recursive rule for the nth term of the arithmetic sequence.

7) 5, 8, 11, 14, ... 7) _____

A) $a_n = a_{n-1} + 3$ B) $a_n = a_{n-1} + 6$ C) $a_n = a_{n-1} - 3$ D) $a_n = a_{n-1} + 4$

8) Find the arithmetic series: $9 + 7 + 5 + \ldots\ldots + (-51)$ 8) _____

Find the sum of the geometric sequence.

9) $\frac{1}{3}, \frac{4}{3}, \frac{16}{3}, \frac{64}{3}, \frac{256}{3}$ 9) _____

Determine whether the infinite geometric series converges. If the series converges, determine the sum.

10) $\frac{1}{32} + \frac{1}{16} + \frac{1}{8} + \frac{1}{4} + \ldots$ 10) _____