Name:

QUIZ 9 – MATH IB HL

1. (30%) The 2nd term of an alternating Geometric sequence is 4 and the 4th term is 6.

   a. (15%) Find the ratio of the sequence.

   b. (5%) Find a_1

   c. (10%) Sum the first 10 terms. Simplify the result as much as possible.

2. (15%) Given that the terms $x+1, 2x+5, 2x^2+10$ form an arithmetic sequence. Find

   a. (10%) The possible values of x.

   b. (5%) The difference of the sequence in each case.

3. (20%) Given that a certain amount X is put in a deposit for 3 years. Find the interest rate in case the amount doubles assuming it is compounded every 3 months. Give your answer as an expression.

4. (15%) Given that a certain amount X is put in a deposit that returns 3% per year Find the amount of time it will take the amount to multiply by 4 assuming it is compounded every 6 months. Give your answer as an expression.

5. (10%) Write fully what is meant by and **simplify as much as possible**

$$\sum_{i=1}^{6} 2^{i-2}(-1)^{i}\ln(i) =$$

6. (10%) Given that a certain amount X is put in a deposit that returns 9% per year. Find the amount of time it will take the amount to grow by 40% assuming it is compounded every month. Give your answer as an expression.