IB PreHL Sequence and Series Exit Slip #2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Arithmetic Sequences:  and Geometric Sequences 

Arithmetic Series:  and Geometric Series  and  when 

**Calculator is allowed.**

1. A geometric series and an arithmetic series both have first term 3 and 11 terms. The 4th term of the arithmetic series and the 6th term of the geometric series are both 96.

a) Find the last term of the arithmetic series.

b) Find the sum of the arithmetic series.

c) Find the common ratio of the geometric series.

d) Find the sum of the geometric series.

2. Find the value of k.

a)  b) 

3. A swinging pendulum travels an arc of 36 cm in its first swing, then 24 cm, then 16 cm and so on.

a). How long is the 6th arc?

b) What is the total distance travelled before coming to rest?

4. The sum of three consecutive terms of a geometric series is 42 and their product is 512. Find these terms.

5. The first term and the common ratio of a geometric series are denoted, respectively, by  and r where. Given that the sum to infinity is, and the second term is. Find all exact values of  and r.

r =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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