Divergence and Convergence

Sum to Infinity

Quickfire Examples: Calculate a, r and for the following sequences

1.

2.

3.

4.

Examples

1. The fourth term of a geometric series is 1.08 and the seventh term is 0.23328.

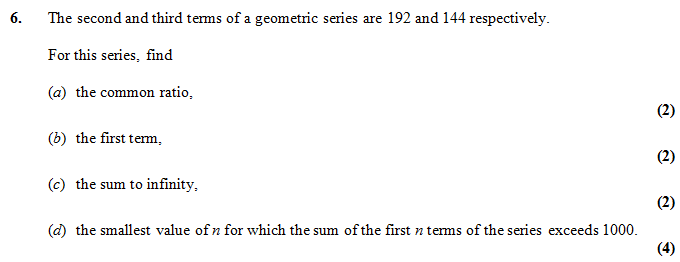
1. Show that this series is convergent.
2. Find the sum to infinity of this series.

2. For a geometric series with first term and common ratio , and .

a) Find the possible values of .

b) Given that all the terms in the series are positive, find the value of .

Test Your Understanding



Extension

1. [MAT 2006 1H] How many solutions does the equation

have in the range

2. [MAT 2003 1F] Two players take turns to throw a fair six-sided die until one of them scores a six. What is the probability that the first player to throw the die is the first to score a six?

3. [Frost] Determine the value of where:

(Hint: Use an approach similar to proof of geometric formula)

Ex 3E Pg 75