

### 3E Geometric Sum to Infinity

1. For the following series:

$$16 + 8 + 4 + 2 \dots$$

a) Find the sum of the first 10 terms

b) Find the sum to infinity

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

a) Show that the series is convergent

b) Calculate the sum to infinity of the series

3. For a geometric series with first term  $a$ , and common ratio  $r$ ,  $S_4 = 15$  and  $S_\infty = 16$ .

a) Find the possible values of  $r$

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