Section 3: Geometric sequences and series

Exercise level 1

1. Find the 10^{th} term of the geometric sequence 20, 16, 12.8, …

2. The first term of a geometric sequence is 1 and the common ratio is 3.
   (i) Find the 7^{th} term.
   (ii) Find the sum of the first 8 terms.

3. A geometric sequence has first term 2 and common ratio 0.75.
   (i) Find the 4^{th} term.
   (ii) Find the sum of the first 5 terms.
   (iii) Find the sum to infinity of the sequence.

4. A geometric sequence has 3^{rd} term 18 and 6^{th} term -60.75. Find the first term and the common ratio.

5. A geometric series has first term 2 and sum to infinity 5.
   (i) Find the common ratio.
   (ii) Find the sum of the first 10 terms of the series.
   (iii) How many terms are needed for the sum of the series to exceed 4.99?

6. A geometric sequence has first term 12, and common ratio 1.5
   (i) Find the fifth term.
   (ii) Find the sum of the first 10 terms, to the nearest whole number.

7. A series is 28 + 7 + 1.75 + ……..
   Find the sum to infinity of the series.