Spiral Review: 1-1 P1 (No Calculator) Algebra Sequences

1. 17M.1.sl.TZ2.1

   (a) In an arithmetic sequence, the first term is 3 and the second term is 7. Find the common difference. [2 marks]

   (b) Find the tenth term. [2 marks]

   (c) Find the sum of the first ten terms of the sequence. [2 marks]

2. 17N.1.sl.TZ0.2

   (a) In an arithmetic sequence, the first term is 8 and the second term is 5. Find the common difference. [2 marks]

   (b) Find the tenth term. [2 marks]

   (c) Find the sum of the first ten terms. [2 marks]

3. 14N.1.sl.TZ0.2

   (a) In an arithmetic sequence, the first term is 2 and the second term is 5. Find the common difference. [2 marks]

   (b) Find the eighth term. [2 marks]

   (c) Find the sum of the first eight terms of the sequence. [2 marks]

4. 14M.1.sl.TZ1.2

   (a) In an arithmetic sequence, the third term is 10 and the fifth term is 16. Find the common difference. [2 marks]

   (b) Find the first term. [2 marks]

   (c) Find the sum of the first 20 terms of the sequence. [3 marks]

5. 11M.1.sl.TZ2.1

   (a) In an arithmetic sequence, $u_1 = 2$ and $u_3 = 8$. Find d. [2 marks]

   (b) Find u_{20}. [2 marks]

   (c) Find S_{20}. [2 marks]

6. Three consecutive terms of a geometric sequence are $x - 3$, 6 and $x + 2$. Find the possible values of x.
   16M.1.sl.TZ2.4 [6 marks]

7. 08N.1.sl.TZ0.1

   (a) Consider the infinite geometric sequence $3, 3(0.9), 3(0.9)^2, 3(0.9)^3, \ldots$. Write down the 10th term of the sequence. Do not simplify your answer. [1 mark]

(b) Find the sum of the infinite sequence. [4 marks]

8. 10N.1.sl.TZ0.1

   (a) The first three terms of an infinite geometric sequence are 32, 16 and 8.
   Write down the value of r. [2 marks]

   (b) Find u_6. [2 marks]

   (c) Find the sum to infinity of this sequence. [2 marks]

9. 16M.1.sl.TZ1.4

   (a) Consider the following sequence of figures.
   Figure 1 contains 5 line segments.
   Given that Figure n contains 801 line segments, show that $n = 200$.[3 marks]

   (b) Find the total number of line segments in the first 200 figures. [3 marks]

10. 16M.1.sl.TZ1.4

   (a) Consider the arithmetic sequence $2, 5, 8, 11, \ldots$.
   Find u_{101}.[3 marks]

   (b) Find the value of n so that $u_n = 152$. [3 marks]