BECA / Huson / 11.1 IB Math SL Name:
4 April 2019
Do Now: Pre-Exam Sequences and series

1a. In an arithmetic sequence, the first term is 3 and the second term is 7.

Find the common difference. *[2 marks]*

1b. Find the tenth term. *[2 marks]*

1c. Find the sum of the first ten terms of the sequence. *[2 marks]*

2a. The first three terms of an arithmetic sequence are $u_1 = 0.3,\ u_2 = 1.5,\ u_3 = 2.7$.

Find the common difference. *[2 marks]*

2b. Find the 30th term of the sequence. *[2 marks]*

2c. Find the sum of the first 30 terms. *[2 marks]*

3a. The first three terms of a geometric sequence are $u_1 = 0.64,\ u_2 = 1.6$, and $u_3 = 4$.

Find the value of r. *[2 marks]*

3b. Find the value of S_6. *[2 marks]*

3c. Find the least value of n such that $S_n > 75\,000$. *[3 marks]*

4a. The first three terms of a geometric sequence are $\ln x^{16}$, $\ln x^8$, $\ln x^4$, for $x > 0$.

Find the common ratio. *[3 marks]*

4b. Solve $\sum_{k=1}^{\infty} 2^{5-k} \ln x = 64$. *[5 marks]*

5. Consider a geometric sequence where the first term is 768 and the second term is 576.

Find the least value of n such that the nth term of the sequence is less than 7. *[6 marks]*