BECA / Huson / 11.1 IB Math SL Name:
8 April 2019

Do Now: Sequences and series, IB-style exam problems

1a. Only one of the following four sequences is arithmetic and only one of them is geometric.

$a_n = 1,\ 2,\ 3,\ 5,\ \ldots$

$b_n = 1,\ \frac{3}{2},\ \frac{9}{4},\ \frac{27}{8},\ \ldots$

$c_n = 1,\ \frac{1}{2},\ \frac{1}{3},\ \frac{1}{4},\ \ldots$

$d_n = 1,\ 0.95,\ 0.90,\ 0.85,\ \ldots$

State which sequence is

(i) arithmetic;

(ii) geometric. *[2 marks]*

1b. For **another** geometric sequence $e_n = -6,\ -3,\ -\frac{3}{2},\ -\frac{3}{4},\ \ldots$

write down the common ratio; *[1 mark]*

1c. Find the **exact** value of the tenth term. Give your answer as a fraction. *[3 marks]*

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1a. i) _____

ii) _____

1b. _____

1c. _____

 Name:

2a. The second term of an arithmetic sequence is 30. The fifth term is 90.

Calculate

(i) the common difference of the sequence;

(ii) the first term of the sequence. *[3 marks]*

2b. The first, second and fifth terms of this arithmetic sequence are the first three terms of a geometric sequence.

Calculate the seventh term of the **geometric** sequence. *[3 marks]*

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2a. i) _____

ii) _____

2b. _____