

Advanced Higher Maths
SQA 2022 Paper 2
Question 6



The first three terms of a sequence are defined algebraically by

$$x + 5, 3x + 2, 5x - 1, \text{ where } x \in \mathbb{N}.$$

- (a) Show that these three terms form the start of an arithmetic sequence. 2
- (b) Find a simplified expression for the 15th term of this sequence. 2
- (c) Given that the sum of the first 20 terms of this sequence is 1130, find the value of x . 2
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Answers:

- (a) Show that $(3x + 2) - (x + 5) = (5x - 1) - (3x + 2)$.
- (b) $29x - 37$
- (c) $x = 4$