2.13-5 Algebra and Sequences: Practice Set 5: 10-minute Pack

Total Marks

GL ASSESSMENT EP.M86 · Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

Algebra and Sequences: Practice Set 5

Revision Library

A fifth 11+ sequences and early-algebra practice set, complementing EP.M13/EP.M13B (Sequences and Patterns), EP.M14/EP.M14B (Early Algebra), EP.M28 (Algebra, Sequences and Patterns Depth), EP.M56 (Sequences, Patterns and Early Algebra: Practice Set 3) and EP.M68 (Sequences and Early Algebra: Practice Set 4). It covers term-to-term and position-to-term sequences, linear nth-term rules, function machines (including reverse and equation-forming problems), forming and simplifying expressions, and one-step, two-step and both-sides equations, with an entirely fresh set of numbers, contexts and names. Questions are ramped from straightforward warm-up items to demanding multi-step and reverse-reasoning problems.

1 The nth term of a sequence is 9n - 7.

Work out the 14th term of the sequence.

(1)

---

2 The nth term of a sequence is 6n + 5.

(a) Write down the first three terms of the sequence. **(1)**

(b) Is 200 a term in this sequence? Show your working to explain your answer. **(2)**

© Revision Library | revisionlibrary.co.uk

3 A function machine works like this: input, then add 12, then multiply by 3, to give the output.

(a) Find the output when the input is 9. **(1)**

.....

(b) Find the input when the output is 45. Show your working. **(2)**

.....

4 Write an expression for each statement. Use the letter given for the unknown number.

(a) 14 less than a number w **(1)**

.....

(b) a number h is trebled, then 6 is subtracted **(1)**

.....

(c) the cost, in pounds, of g garden chairs at 35p each **(1)**

.....

5 Simplify fully.

(a) 15t - 8t + 2t **(1)**

(b) 9p + 4q - 6p - 5q **(1)**

© Revision Library | revisionlibrary.co.uk

Mark scheme · 2.13-5 Algebra and Sequences: Practice Set 5: 10-minute Pack

Question 1

119 cao **B1**

Answer: 119

Question 2

(a) 11, 17, 23 all correct cao **B1**

(a) Answer: 11, 17, 23

(b) sets 6n + 5 = 200 and attempts to solve for n **M1**

(b) correct conclusion with valid reason: No, because n = 32.5, which is not a whole number **A1**

(b) Answer: No, because n is not a whole number (n = 32.5)

Question 3

(a) 63 cao **B1**

(a) Answer: 63

(b) correct reverse method: divide by 3 then subtract 12 oe **M1**

(b) 3 cao **A1**

(b) Answer: 3

Question 4

(a) w - 14 oe **B1**

(a) Answer: w - 14

(b) 3h - 6 oe **B1**

(b) Answer: 3h - 6

(c) 0.35g oe (accept 7g/20) **B1**

(c) Answer: 0.35g (or 7g/20)

Question 5

(a) 9t cao **B1**

(a) Answer: 9t

(b) 3p - q oe cao **B1**

(b) Answer: 3p - q

© Revision Library | revisionlibrary.co.uk