

Name _____

Date _____

Stage 7 End-of-unit test 9

21 questions · 41 marks · calculators are not allowed · allow about 45 minutes

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- 1 The sequence is 4, 9, 14, 19, ... What is the next term? [1]

- 2 The sequence is 40, 34, 28, 22, ... What is the next term? [1]

- 3 The sequence is 3, 8, 13, 18, ... What is the term-to-term rule? Give the number added each time. [2]

- 4 A sequence starts at 6 and the rule is “add 7”. What is the 10th term? [3]

- 5 How can you tell a sequence is linear? [2]
☐ It starts at 1
☐ The gap between terms is always the same
☐ It grows quickly
☐ The terms are whole numbers
- 6 The n th term is $4n + 3$. What is the 1st term? [1]

- 7 The n th term is $4n + 3$. What is the 20th term? [2]

- 8 Find the n th term of 5, 8, 11, 14, ... [3]

- 9 In the rule $5n - 2$, what does the 5 tell you? [2]
☐ The first term
☐ The common difference
☐ The number of terms
☐ The last term
- 10 The n th term is $6n - 4$. Which position gives the term 50? [2]

- 11 Is 100 a term of the sequence with n th term $4n + 2$? [2]
☐ Yes
☐ No
- 12 A function machine does “ $\times 3$ ”. What comes out when 7 goes in? [1]

13 A machine does “ $\times 3$ then $+ 4$ ”. What comes out when 5 goes in? [2]

14 A machine does “ $\times 3$ then $+ 4$ ”. The output is 25. What was the input? [3]

15 In a two-step machine, in what order do you undo the steps? [2]

- ☐ The same order
- ☐ The reverse order
- ☐ Either order
- ☐ Only the first

16 A machine does “ $+ 1$ then $\times 2$ ”. Written as a function that is ... [2]

- ☐ $y = 2x + 1$
- ☐ $y = 2(x + 1)$
- ☐ $y = x + 2$
- ☐ $y = 2x$

17 For $y = 4x - 5$, what is y when $x = 6$? [1]

18 For $y = 4x - 5$, what is x when $y = 23$? [2]

19 A taxi costs $2n + 3$ dollars for n km. What does 12 km cost, in dollars? [2]

20 A pattern uses $3n + 1$ sticks for n squares. How many squares can be made with 34 sticks? [3]

21 A plant is 8 cm tall and grows 3 cm a week. How tall after 5 weeks, in cm? [2]

END OF TEST