Year 6 Patterns and equations topic test

Name: _____ Date: _____

12 questions | 22 marks | 30 minutes

A hand-solvable review that builds from familiar skills to reasoning and practical applications.

No calculator needed.

1. Continue the constant-step pattern: 0.4,0.8,1.2,__ ,__. [2 marks]

2. A pattern starts at $\frac{1}{4}$ and increases by $\frac{1}{4}$. Write its first five terms. [2 marks]

3. Use "$\text{term number} \times 3$, then add 2" to find term 7. [1 mark]

4. The constant-step values for terms 1,2,3 are 8,12,16. Give a rule using the term number. [2 marks]

5. Calculate $9 + 2 \times 5$. [1 mark]

6. Calculate $(9 + 2) \times 5$. [1 mark]

7. Calculate $30 \div 5 \times 2$. [2 marks]

8. Find the missing number: $\square - 14 = 27$. [1 mark]

9. A number is multiplied by 5 and then 2 is added. The result is 37. Find the number. [2 marks]

10. Start at 0.5, record it, and add 0.5 each time. Stop after recording four terms. Write the output. [2 marks]

11. A tile design has 6 tiles at stage 1 and adds 4 tiles at every new stage. How many tiles are at stage 10? Explain. [3 marks]

12. An algorithm starts at 3 and adds 4 until the value is exactly 20. Explain why it fails and suggest a clear stopping rule. [3 marks]