Algebraic expressions and formulas - topic test

Name: _____ Date: _____

15 questions | 36 marks | 45 minutes

A progressive by-hand paper covering notation, expressions, brackets, substitution, equivalence and formula tables.

No calculator needed.

1. In $5x + 9$, name the variable. [1 mark]

2. What is the coefficient of a in $7a + 4$? [1 mark]

3. Write $6 \times b$ using algebraic shorthand. [1 mark]

4. Write $p \times p \times p$ using a power. [1 mark]

5. Write four more than twice n. [2 marks]

6. Write five less than $3t$. [2 marks]

7. Evaluate $3m + 8$ when $m = 4$. [2 marks]

8. Evaluate $x^2 + 3x$ when $x = 5$. [2 marks]

9. Simplify $4a + 3a + 6$. [2 marks]

10. Write $3(k + 2)$ without brackets. [2 marks]

11. Use $P = 2(l + w)$ for a rectangle 11 cm long and 4 cm wide. [2 marks]

12. Badges cost $C = 2n + 7$ dollars. Find the cost for 9 badges and explain what 7 represents. [3 marks]

13. A snack pack contains a sandwich costing s dollars and a drink costing 3 dollars. Answer the parts. [6 marks]

(a) Write the cost of one pack. [1 mark]

(b) Write the cost of four equal packs. [2 marks]

(c) Find the cost of four packs when $s = 5$. [3 marks]

14. Oliver says $2(x + 6)$ is always $2x + 6$. Check $x = 3$ and correct the expression. [3 marks]

15. Use the rule $y = 3x + 2$ to answer the parts. [6 marks]

(a) Find y for $x = 0$, 2 and 5. [3 marks]

(b) Cell A2 holds x. Write a spreadsheet formula. No computer is needed. [1 mark]

(c) How does y change if x increases by 1? Explain. [2 marks]