Topic test | Algebra

Algebra - practice test 2

Name: _____ Date: _____

16 questions | 39 marks | 55 minutes

A balanced second paper using signed substitution, equivalent forms and formula rearrangement.

No calculator needed.

1. Simplify $11m - 4m$. [1 mark]

2. Simplify $2x^2 + 5x - 7x^2 + 3x$. [2 marks]

3. Simplify $\frac{24a^3b}{6ab}$ for $a, b \neq 0$. [2 marks]

4. Expand $7(2p - 1)$. [2 marks]

5. Simplify $9-(4x-6)$. [2 marks]

6. Simplify $3(2y-5)-2(y+1)$. [3 marks]

7. Fully factorise $21a+14$. [2 marks]

8. Fully factorise $16x^3+24x^2$. [2 marks]

9. Evaluate $2p^2+3q$ for $p=-4$, $q=-2$. [2 marks]

10. Make u the subject of $v = u + at$. [2 marks]

11. Make l the subject of $P = 2l + 2w$. [3 marks]

12. A cost is given by $T = 7 + 4n$ dollars. [3 marks]

(a) Find T when $n = 6$. [1 mark]

(b) Make n the subject. [2 marks]

13. Are $4(x + 3) - x$ and $3x + 12$ equivalent? Explain algebraically. [3 marks]

14. A student claims $2x + 1$ and $3x$ are equivalent because they agree at $x = 1$. Disprove this. [3 marks]

15. Three bags each contain n marbles and 4 counters. Write the total number of objects without brackets. [3 marks]

16. A triangle has area $A = 54\ \text{cm}^2$ and base $b = 12\ \text{cm}$. Its height is h, and $A = \frac{1}{2}bh$. [4 marks]

(a) Make h the subject. [2 marks]

(b) Find the height of this triangle. [2 marks]