Topic test | Algebra

Algebra practice test 1

Name: _____ Date: _____

16 questions | 39 marks | 55 minutes

A balanced review of expressions, fractions, equations and formulas.

No calculator needed.

1. Simplify $8x - 3x + 2$. [2 marks]

2. Simplify $4a + 7b - a - 2b$. [2 marks]

3. Expand $3(2p - 5)$. [2 marks]

4. Expand and simplify $2(x + 4) - 3(x - 1)$. [2 marks]

5. Factorise $18m + 12$. [2 marks]

6. Factorise $10x^2y - 15xy$. [2 marks]

7. Simplify $\frac{9a}{12a}$ and state its restriction. [2 marks]

8. State the restrictions for $\frac{x+1}{x(x-5)}$. [2 marks]

9. Simplify $\frac{2}{x} + \frac{3}{x}$. [2 marks]

10. Simplify $\frac{1}{x} + \frac{2}{x+1}$. [3 marks]

11. Solve $\frac{x}{4} + \frac{1}{3} = \frac{5}{6}$. [3 marks]

12. Make h the subject of $V = \pi r^2 h$. [2 marks]

13. A club shares a fixed fee of 48 dollars equally among n people, in addition to 7 dollars each. Write the cost per person as one fraction and state the practical domain. [3 marks]

14. Find the real domain of $f(x) = \sqrt{x-2}/(x-6)$. [3 marks]

15. Solve $\frac{x+4}{x-1} = \frac{5}{x-1}$, checking the candidate. [3 marks]

16. Consider the formula $y = ax + 2x$. [4 marks]

(a) Make x the subject and state any condition on a. [2 marks]

(b) Explain the solutions when $a = -2$. [2 marks]