Algebraic Fractions

GCSE Mathematics • **Higher Tier** • Grades 8–9 • Non-calculator

Name: _____ Class: _____ Total: _____ / 62

Show all your working. Marks are given for correct method as well as the final answer.

1. Simplify $\frac{6x}{9}$. **[1 mark]**

Answer: _____

2. Simplify $\frac{x^2}{x^5}$. **[2 marks]**

Answer: _____

3. Simplify $\frac{4x^3}{12x}$. **[2 marks]**

Answer: _____

4. Simplify $\frac{2x+6}{4}$. **[2 marks]**

Answer: _____

5. Simplify $\frac{3x+12}{x+4}$. **[3 marks]**

Answer: _____

6. Simplify $\dfrac{x^2-9}{x+3}$. **[3 marks]**

Answer: _____

7. Simplify $\dfrac{x^2-16}{x^2+5x+4}$. **[4 marks]**

Answer: _____

8. Simplify $\dfrac{x^2+7x+10}{x^2+3x-10}$. **[4 marks]**

Answer: _____

9. Simplify $\dfrac{2x^2+5x-3}{x^2-9}$. **[4 marks]**

Answer: _____

10. Explain why $\dfrac{x+4}{x}$ does NOT simplify to 4. **[2 marks]**

Answer: _____

11. Simplify $\frac{x}{3} \times \frac{6}{x^2}$. **[3 marks]**

Answer: _____

12. Simplify $\frac{x+2}{5} \times \frac{10}{x+2}$. **[3 marks]**

Answer: _____

13. Simplify $\frac{x}{4} \div \frac{x}{8}$. **[3 marks]**

Answer: _____

14. Simplify $\frac{x}{3} + \frac{x}{4}$. **[3 marks]**

Answer: _____

15. Simplify $\frac{2x}{5} - \frac{x}{3}$. **[3 marks]**

Answer: _____

16. Write $\frac{1}{x} + \frac{1}{y}$ as a single fraction. **[3 marks]**

Answer: _____

17. Write $\frac{2}{x} + \frac{3}{x+1}$ as a single fraction. **[4 marks]**

Answer: _____

18. Write $\frac{3}{x-2} - \frac{1}{x}$ as a single fraction. **[4 marks]**

Answer: _____

19. Solve $\frac{x}{2} + \frac{x}{3} = 5$. **[4 marks]**

Answer: _____

20. Simplify $\dfrac{x^2-4}{x^2-x-6}$.

(a) Factorise the numerator and the denominator. **[3 marks]**

(b) Hence simplify the fraction fully. **[2 marks]**

Answer: _____

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