

The Panda Math Tutor

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Algebraic Fractions

Student Worksheet
Questions & Working Space
IGCSE Mathematics

Name: _____

Date: _____

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Teach → Practice → Reason → Apply → Challenge → Master

Contents

1	Part I — Topic-by-Topic Exercises	2
1.1	Simplifying: Coefficients and Common Factors	2
1.2	Simplifying by Factorising Quadratics	4
1.3	Multiplying and Dividing	7
1.4	Adding and Subtracting: Same and Numerical Denominators	9
1.5	Adding and Subtracting: Algebraic Denominators	11
1.6	Solving Equations with Algebraic Fractions	15
1.7	Forming and Solving Problems	18
1.8	Complex Fractions	21
2	Part II — Mixed Review	23
3	Part III — Examination-Style Practice	28

Note

How to use this worksheet. These questions are built *strictly* on the *Algebraic Fractions* notes: simplifying by factorising, multiplying and dividing, adding and subtracting with numerical and algebraic denominators, solving equations by clearing fractions, forming equations from rate and journey problems, repeated factors, and complex fractions.

Show the factorised form. Never cancel mentally. Write each numerator and denominator in factorised brackets first, then cancel — that written line is where the method marks are.

Brackets when subtracting. Whenever you subtract a numerator that has more than one term, put it in brackets before you expand. Sign slips here are the single biggest source of lost marks in this topic.

Checking solutions. After solving any equation, substitute your answer back into the *original* equation and confirm that no denominator becomes zero. Reject any value that does.

Working space. Ruled lines follow each question. Harder questions have a teal **Hint** box; try the question first and use the hint only if you are stuck.

Checking your answers. Full step-by-step solutions, a marking scheme for the exam paper, and a quick answer key are in the separate booklet “*Algebraic Fractions — Solutions & Answer Key*.” Try each question honestly before you look.

1 Part I — Topic-by-Topic Exercises

1.1 Simplifying: Coefficients and Common Factors

Exercise S1 *[Basic]*

Simplify $\frac{12a^5b^3}{18a^2b^7}$.

Exercise S2 [*Basic*]

Simplify $\frac{6x + 15}{3}$.

Exercise S3 [*Standard*]

Simplify $\frac{5y^2 - 20y}{10y}$.

Hint

Factorise the numerator first. You may only cancel a factor that divides the *whole* numerator.

Exercise S4 [*Standard*]

Simplify $\frac{4x + 12}{x^2 - 9}$.

Preview ends here

30 more pages are in the full pack.

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