# The Panda Math Tutor

www.thepandamathtutor.com

# Algebraic Fractions

## Student Worksheet

Questions & Working Space

IGCSE Mathematics

Name: _____

Date: _____

The Panda Math Tutor

Prepared by

**Nikolas Agisilaou**

# 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**

The Panda Math Tutor

**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 $\dfrac{12a^5b^3}{18a^2b^7}$.

The Panda Math Tutor

**Exercise S2** *[Basic]*

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

**Exercise S3** *[Standard]*

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

**Hint**

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

The Panda Math Tutor

**Exercise S4** *[Standard]*

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

# Preview ends here

30 more pages are in the full pack.

Algebraic Fractions — Worksheet — €11.99

Buy the pack and the complete PDF lands in your inbox.

Personal study use only — please don't resell or share.