

Algebraic Fractions

Question Paper

Course	Edexcel IGCSE Maths
Section	2. Equations, Formulae & Identities
Topic	Algebraic Fractions
Difficulty	Hard

Time allowed: 60
Score: /50
Percentage: /100

Question 1

Simplify fully $\frac{2x^2 - 5x + 3}{x^2 + 5x - 6}$

[3 marks]

Question 2

Write as a single fraction in its simplest form $\frac{5}{2-x} - \frac{4}{x}$

[3 marks]

Question 3

Simplify $\frac{x^2 - 16}{2x^2 - 5x - 12}$

[3 marks]

Question 4

Simplify fully $\frac{3x^2 - 8x - 3}{2x^2 - 6x}$

[3 marks]

Question 5

Show that $\frac{2x^2 - 3x - 5}{x^2 + 6x + 5}$ can be written in the form $\frac{ax + b}{cx + d}$ where a , b , c and d are integers.

[3 marks]

Question 6a

Simplify fully $\frac{x^2 + 3x - 4}{2x^2 - 5x + 3}$

[3 marks]

Question 6b

Write $\frac{4}{x+2} + \frac{3}{x-2}$ as a single fraction in its simplest form.

[3 marks]

Question 7

Show that $\frac{a}{b+1} - \frac{a}{(b+1)^2}$ can be written as $\frac{ab}{(b+1)^2}$

[2 marks]

Question 8

Simplify $\frac{x^2 - 9}{2x^2 + 5x - 3}$

[3 marks]

Question 9

Solve $\frac{4 - 3x}{5} - \frac{3x - 5}{2} = -3$

Show clear algebraic working.

$x = \dots\dots\dots$

[3 marks]

Question 10

Solve the equation

$$\frac{5}{x+2} + \frac{3}{x^2+2x} = 2$$

Show clear algebraic working.

[5 marks]

Question 11

Simplify fully $\frac{x^5 - 4x^3}{3x - 6}$

[3 marks]

Question 12

Show that, for $x \neq -1$

$\frac{8x^2 - 8}{4x + 4}$ simplifies to the form $ax + b$ where a and b are integers.

[3 marks]

Question 13

Show that $\frac{x+9}{x^2-1} + \frac{4}{x+1}$ can be written in the form $\frac{a}{x-1}$ where a is an integer.

[4 marks]

Question 14

Show that $\frac{5x}{x+5} + \frac{25}{x-7} - \frac{300}{(x+5)(x-7)}$ simplifies to an integer.

[6 marks]