

Algebraic fractions: adding, subtracting and solving

Grade 8 | Higher | 11 questions, 43 marks

GCSE Maths topic practice



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Name: _____ **Date:** _____ **Score:** _____ / 43

1 Write $\frac{x+1}{2} + \frac{2x-1}{5}$ as a single fraction in its simplest form. (2 marks)

Answer _____

2 Write $\frac{3}{x+1} - \frac{2}{x+4}$ as a single fraction. Simplify the numerator. (3 marks)

Answer _____

3 Show that $\frac{4}{x+3} - \frac{2}{x+5}$ can be written as $\frac{2(x+7)}{(x+3)(x+5)}$ (3 marks)

Answer _____

4 Solve $\frac{x+4}{3} + \frac{2x-1}{5} = 7$ (3 marks)

Answer _____

5 Solve

$$\frac{4}{x-1} - \frac{2}{x+2} = 1$$

(4 marks)

Answer _____

6 Solve

$$\frac{1}{x-2} + \frac{2}{x+1} = 3$$

Give your answers in the form $a \pm \sqrt{b}$ where a and b are integers.

(5 marks)

Answer _____

7 Show that

$$\frac{x^2 + 3x}{x^2 - x - 12} - \frac{2}{x+1}$$

can be written as $\frac{x^2 - x + 8}{(x-4)(x+1)}$

(6 marks)

Answer _____

8

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

b. Hence, or otherwise, solve

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

(6 marks)

Answer _____

9

Write $\frac{2}{x^2 - 9} + \frac{1}{x + 3}$ as a single fraction in its simplest form.

(3 marks)

Answer _____

10

$$\frac{x + 2y}{3x - y} = 2$$

Find the ratio $x : y$. Give your answer in the form $a : b$ where a and b are integers.

(3 marks)

Answer _____

11

$$\text{Solve } \frac{3}{x + 2} + \frac{4}{x - 1} = 1$$

Show all your working.

(5 marks)

Answer _____

End of questions | Total 43 marks