GCSE Exam Questions

Simplifying Algebraic Fractions | Algebra

GCSE Exam Questions: Simplifying Algebraic Fractions

1) Express the following as a single fraction.

Give your answers in their simplest form.

(a) $\dfrac{p}{3} + \dfrac{p}{4}$

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(1)

(b) $\dfrac{7x}{18} + \dfrac{x}{3}$

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(1)

(c) $\dfrac{25y}{27} + \dfrac{2y}{9}$

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(1)

(3 marks)

2) **(a)** Simplify fully: $\dfrac{x - 5}{3x - 15}$

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(1)

(b) Simplify fully: $\dfrac{x^2 + x - 6}{x^2 - x - 12}$

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(2)

(3 marks)

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GCSE Exam Questions: Simplifying Algebraic Fractions

3) **(a)** Simplify fully: $\dfrac{3a}{2} \times \dfrac{4}{5a}$

(2)

(b) Simplify fully: $\dfrac{h}{2} \div \dfrac{h}{6}$

(2)

(4 marks)

4) Simplify fully: $\dfrac{4x^2 - 25}{6x^2 - 11x - 10}$

(3)

(3 marks)

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GCSE Exam Questions: Simplifying Algebraic Fractions Answers

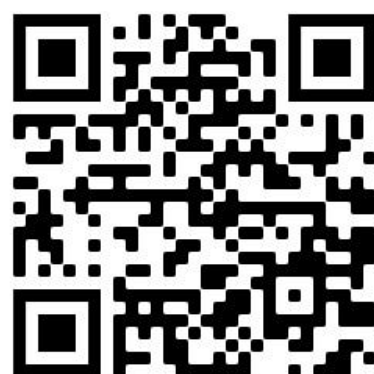|	Question	Answer	Marks
1) **(a)**	Express the following as a single fraction. Give your answers in their simplest form. $\dfrac{p}{3} + \dfrac{p}{4}$	(a) $\dfrac{4p}{12} + \dfrac{3p}{12} = \dfrac{7p}{12}$	**(1)**
(b)	$\dfrac{7x}{18} + \dfrac{x}{3}$	(b) $\dfrac{7x}{18} + \dfrac{6x}{18} = \dfrac{13x}{18}$	**(1)**
(c)	$\dfrac{25y}{27} + \dfrac{2y}{9}$	(c) $\dfrac{25y}{27} + \dfrac{6y}{27} = \dfrac{31y}{27}$ **or** $1\dfrac{4y}{27}$	**(1)**
2) (a)	Simplify fully: $\dfrac{x-5}{3x-15}$	(a) $\dfrac{x-5}{3x-15} = \dfrac{x-3}{3(x-5)} = \dfrac{1}{3}$	**(1)**
(b)	Simplify fully: $\dfrac{x^2+x-6}{x^2-x-12}$	(b) $\dfrac{(x-2)(x+3)}{(x+3)(x-4)}$ $\dfrac{x-2}{x-4}$	**(1)** **(1)**
3) (a)	Simplify fully: $\dfrac{3a}{2} \times \dfrac{4}{5a}$	(a) $\dfrac{12a}{10a}$ $\dfrac{6}{5}$ **or** $1\dfrac{1}{5}$	**(1)** **(1)**
(b)	Simplify fully: $\dfrac{h}{2} \div \dfrac{h}{6}$	(b) $\dfrac{h}{2} \times \dfrac{6}{h}$ **or** $\dfrac{6h}{2h}$ 3	**(1)** **(1)**
4)	Simplify fully: $\dfrac{4x^2-25}{6x^2-11x-10}$	$(2x - 5)(2x + 5)$ **or** $(2x - 5)(3x + 2)$ $\dfrac{(2x-5)(2x+5)}{(2x-5)(3x+2)}$ $\dfrac{2x+5}{3x+2}$	**(1)** **(1)** **(1)**

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