

Simplifying Algebraic Fractions

For AQA GCSE Mathematics (8300) • Higher tier

Name _____

Total marks: **28**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

1 Simplify fully

(a) $\frac{6x^2y}{9xy^3}$

[2 marks]

Answer _____

(b) $\frac{4x + 12}{x^2 + 3x}$

[2 marks]

Answer _____

2 Circle the expression equal to $\frac{x^2 - 4x}{x - 4}$

[1 mark]

$-4x$

x

$x - 1$

x^2

3 Simplify fully $\frac{x^2 - 9}{x^2 + x - 6}$

[3 marks]

Answer _____

4 Simplify fully $\frac{2x^2 + 5x - 3}{4x^2 - 1}$

[3 marks]

Answer _____

5 Simplify fully $\frac{6x - 9x^2}{15x - 10}$

[3 marks]

Answer _____

- 6 (a) Factorise $2x^2 + 7x - 15$

[2 marks]

Answer _____

- (b) Simplify fully $\frac{2x^2 + 7x - 15}{x^2 - 25}$

[3 marks]

Answer _____

- 7 Simplify fully $\frac{x^4 - 9x^2}{2x + 6}$

[3 marks]

Answer _____

- 8 Ali says,
“For $x \neq 3$, $\frac{2x^2 - 18}{x - 3}$ simplifies to $2x - 6$ ”

Is Ali correct?

You must show your working.

[3 marks]

9 a and b are positive values.

Show that $\frac{4a^2 - b^2}{2a^2 + ab}$ can be written as $2 - \frac{b}{a}$

[3 marks]