

ALGEBRAIC FRACTIONS (SIMPLIFYING)

[ESTIMATED TIME: 75 minutes]

GCSE

(+ IGCSE) EXAM QUESTION PRACTICE

1.

[3 marks]

Simplify fully $\frac{x}{6} + \frac{3x}{4}$

.....

2.

[3 marks]

Simplify $\frac{x^2 - 25}{2x^2 - 9x - 5}$

.....

3.**[3 marks]**

Express the algebraic fraction $\frac{2x^2 - 3x - 20}{x^2 - 16}$ as simply as possible.

.....

4.**[6 marks]**

Simplify

(a) $\frac{x^2 - 3x}{2x - 6}$

.....
(3)

(b) $\frac{2}{x-1} - \frac{3}{x}$

.....
(3)

5.**[3 marks]**

Simplify fully $\frac{4x^2 - 25}{6x^2 + 13x - 5}$

.....

6.**[4 marks]**

Simplify fully $\frac{5x^2 + 14x - 3}{50x^2 - 2}$

.....

7.**[3 marks]**

Simplify fully $\frac{x^2 + 6x}{x^2 - 36}$

.....

8.**[5 marks]**

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

.....

(a) Simplify $\frac{x^2}{x^2 - 2x}$

.....
(2)

(b) Simplify $\frac{2}{2x-1} - \frac{1}{x+1}$

.....
(4)

10.**[3 marks]**

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

.....

11.**[3 marks]**

Simplify fully $\frac{x^2 - 16}{x^2 - 6x + 8}$

.....

Express $\frac{4}{x-1} - \frac{3}{x+1}$ as a single fraction.

Give your answer as simply as possible.

.....

13.**[3 marks]**

Express $\frac{3}{x+2} - \frac{6}{2x+5}$ as a single fraction.

Simplify your answer.

14.**[4 marks]**

Simplify fully $\frac{6x^2 + x - 15}{12x^2 - 27}$

Show clear algebraic working.

.....

Simplify fully $1 + \frac{x^2 + x - 6}{(x + 4)(x - 2)}$

.....

16.**[6 marks]**

Simplify fully $\frac{2}{x-1} + \frac{x-11}{x^2+3x-4}$

.....

17.**[3 marks]**

Simplify fully $\frac{2x^2-5x-12}{4x^2-9}$

.....

18.**[4 marks]**

Write $5 - (x + 2) \div \left(\frac{x^2 - 4}{x - 3} \right)$ as a single fraction.

Simplify your answer fully.

.....

19.**[5 marks]**

Simplify fully $\frac{5}{2x - 6} - \frac{x + 2}{x^2 - 4x + 3}$

.....