

Rational Functions

Difficulty: Easy

Question Paper 1

Level	A Level only
Subject	Maths - Pure
Exam Board	Edexcel
Topic	Algebraic Methods
Sub-Topic	Rational Functions
Difficulty	Easy
Booklet	Question Paper 1

Time allowed: 44 minutes

Score: /37

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>76%	61%	52%	42%	33%	23%	<23%

Question 1

Express

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

as a single fraction in its simplest form.

(Total 7 marks)

Question 2

(a) Simplify $\frac{3x^2 - x - 2}{x^2 - 1}$.

(3)

(b) Hence, or otherwise, express $\frac{3x^2 - x - 2}{x^2 - 1} - \frac{1}{x(x + 1)}$ as a single fraction in its simplest form.

(3)

(Total 6 marks)

Question 3

Express

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

as a single fraction in its simplest form.

(4)

(Total 4 marks)

Question 4

Express $\frac{4x}{x^2-9} - \frac{2}{x+3}$ as a single fraction in its simplest form.

(4)

(Total 4 marks)

Question 5

Express $\frac{6}{4x^2 + 8x - 5} + \frac{3x + 1}{2x - 1}$ as a single fraction in its simplest form.

(4)

Question 6

(Total 4 marks)

Express

$$\frac{3x + 5}{x^2 + x - 12} - \frac{2}{x - 3}$$

as a single fraction in its simplest form.

(4)

(Total 4 marks)

Question 7

Express

$$\frac{3x^2}{(2x^2 + 7x + 6)} \times \frac{7(3 + 2x)}{3x^5}$$

as a single fraction in its simplest form.

(4)

Question 8

(Total 4 marks)

Express

$$\frac{2(3x + 2)}{9x^2 - 4} - \frac{2}{3x + 1}$$

as a single fraction in its simplest form.

(4)

(Total 4 marks)