

Write your name here

Surname

Other names

Pearson Edexcel
Level 3 GCE

Centre Number

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Candidate Number

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Mathematics

Year 11 to Year 12 Transition Paper

Algebraic Methods

You must have:

Mathematical Formulae and Statistical Tables,
calculator

Total Marks

Candidates may use any calculator permitted by Pearson regulations. Calculators must not have the facility for algebraic manipulation, differentiation and integration, or have retrievable mathematical formulae stored in them.

Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches/graphs it must be dark (HB or B).
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions and ensure that your answers to parts of questions are clearly labelled.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- You should show sufficient working to make your methods clear. Answers without working may not gain full credit.
- Answers should be given to three significant figures unless otherwise stated.


Information

- A booklet 'Mathematical Formulae and Statistical Tables' is provided.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.
- If you change your mind about an answer cross it out and put your new answer and any working out underneath.

Turn over ►

Calculators may NOT be used to answer these questions unless a  symbol is shown next to the question.

1. Simplify $\frac{x^2 + 7x - 8}{(x + 8)^2}$

(Total for Question 1 is 2 marks)

2. Express $\frac{2x}{x+3} + \frac{7}{x-3}$ as a single fraction.

Give your answer in its simplest form.

(Total for Question 2 is 3 marks)

3. Write $\frac{x}{3x+4} + \frac{x-3}{2x-1}$ as a single fraction.

Give your answer in its simplest form.

(Total for Question 3 is 3 marks)

4. Simplify fully $\frac{x^2 - 9}{(x-3)^2(x+3)^2}$

(Total for Question 4 is 2 marks)

5. Simplify $\frac{x^2 - 9}{x^2 - 4x + 3}$

(Total for Question 5 is 3 marks)

6. Simplify $\frac{u-2}{u^2 - 4u + 4}$

(Total for Question 6 is 2 marks)

7. Write $\frac{x}{x-3} + \frac{x-2}{x+3}$ as a single fraction.

Give your answer in its simplest form.

(Total for Question 7 is 3 marks)

8. Simplify fully $\frac{x-1}{x+7} \div \frac{x^2-x}{x^2-49}$

(Total for Question 8 is 3 marks)

9. Express $\frac{x+3}{2x-3} + \frac{4-x}{2x+3}$ as a single fraction.

Give your answer in its simplest form.

(Total for Question 9 is 3 marks)

10. Simplify $\frac{6x-10}{6x^2-22x+20}$

(Total for Question 10 is 2 marks)

11. Write $\frac{8}{5x+5y} - \frac{x}{x^2-y^2}$ as a single fraction.

Give your answer in its simplest form.

(Total for Question 11 is 4 marks)

12. Simplify $\frac{3}{2x} - \frac{9x}{6x^2-4x}$


(Total for Question 12 is 3 marks)

13. Simplify $\frac{x^2+2x}{x^2+7x+10}$

(Total for Question 15 is 2 marks)

14. Simplify fully $\frac{3x-x^2}{x^2-9} \div \frac{2x+6}{(x+3)^2}$

(Total for Question 14 is 4 marks)

 15. Show that $\frac{x^3+3x^2-4x-12}{x^3+5x^2+6x}$ can be written in the form $A + \frac{B}{x}$, where A and B are integers to be found.

(Total for Question 13 is 3 marks)
