Write your name, centre number and candidate number in the boxes below.

Surname	Other names

Centre number | | | | | |

Candidate number | | | | |

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Algebraic fractions

Time allowed: 45 minutes

Subject code **0580**

Mathematics

Questions from Paper 2 and Paper 4

You must have: a ruler marked in centimetres and millimetres, a protractor, compasses, a pen, an HB pencil and an eraser.
You may use a calculator.

Total marks

/ 36

Instructions

- Answer every question in the space provided on this paper.
- Write in black or dark blue ink. Pencil may be used for diagrams and graphs.
- Fill in your name, centre number and candidate number above.
- Show your working: a correct method can earn marks even if the answer is wrong.
- Unless a question says otherwise, give answers that are not exact to 3 significant figures, and angles in degrees to 1 decimal place.

Information

- This paper has 10 questions worth 36 marks in total.
- The marks for each question or part are shown in brackets, for example [3].

Advice

- Read every question through once before you write anything.
- Use the marks in brackets to judge how long to spend on each part.
- If you finish early, go back and check your working.

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Print at 100% (Actual size) so diagrams keep their real measurements.

1 Write the following as single fractions.

(a) $x + \frac{x}{2}$

Answer(a) ..... [1]

(b) $x + \frac{2}{x}$

Answer(b) ..... [1]

(a) Adding and subtracting algebraic fractions (b) Adding and subtracting algebraic fractions Click for more variations

2 Write as a single fraction in its simplest form

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

Answer ..... [2]

Adding and subtracting algebraic fractions Click for more variations

3 Write as a single fraction in its simplest form.

$$\frac{1}{x} - \frac{1}{x+1}$$

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..... [3]

Adding and subtracting algebraic fractions Click for more variations

4 Simplify.

$$\frac{h^2+4h}{h^2-16}$$

..... [3]

Simplifying algebraic fractions Click for more variations

5 Simplify.

(a) $\frac{p}{t} \div \frac{2}{t}$

..... [2]

(b) $\frac{3x}{4} - \frac{x-1}{2}$

..... [2]

(a) Simplifying algebraic fractions (b) Adding and subtracting algebraic fractions Click for more variations

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6 Write as a single fraction in its simplest form.

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

Answer ..... [4]

Adding and subtracting algebraic fractions Click for more variations

7 Simplify.

$$\frac{2x^2-11x-21}{x^2-49}$$

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..... [4]

Simplifying algebraic fractions Click for more variations

8 Simplify.

$$\frac{3xy+36y-5x-60}{2x^2-288}$$

..... [4]

Simplifying algebraic fractions Click for more variations

9 **(a)** Write $\frac{1}{y}-\frac{2}{x}$ as a single fraction in its lowest terms.

Answer(a) [2]

(b) Write $\frac{x^2+x}{3x+3}$ in its lowest terms.

Answer(b) [3]

(a) Adding and subtracting algebraic fractions (b) Simplifying algebraic fractions Click for more variations

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10 Write as a single fraction in its simplest form.

(a) $\frac{mp}{25y} \times \frac{15}{m}$

..... [2]

(b) $\frac{3}{2x-5} + \frac{4}{x-3}$

..... [3]

(a) Simplifying algebraic fractions (b) Adding and subtracting algebraic fractions Click for more variations

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