MME

GCSE MATHEMATICS

AQA | Edexcel | OCR | WJEC

Algebraic Fractions

Please write clearly in block capitals

Forename:
Surname:

Materials

For this paper you must have:
- mathematical instruments

You ***can*** use a calculator.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.

1 Express the following as single fractions.

Give your answers in their simplest forms.

1(a) $\frac{m}{3}+\frac{m}{4}$

[1 mark]

Answer _____

1(b) $\frac{x}{16}+\frac{7x}{4}$

[1 mark]

Answer _____

1(c) $\frac{25x}{27}+\frac{2x}{9}$

[1 mark]

Answer _____

Turn over for next question

3

2 Express the following as single fractions

Give your answers in their simplest forms.

2(a) $\frac{4y}{7} - \frac{6y}{35}$

[1 mark]

Answer _____

2(b) $\frac{10x}{3} - \frac{3}{9}$

[1 mark]

Answer _____

2(c) $\frac{10}{y} - \frac{4}{5}$

[1 mark]

Answer _____

Turn over for next question

3

3 Express the following as single fractions

Give your answers in their simplest forms.

3(a) $\frac{x-10}{2}+\frac{3x}{10}$

[1 mark]

Answer _____

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

[1 mark]

Answer _____

3(c) $\frac{a+3}{2}+\frac{2a\ -1}{3}$

[2 marks]

Answer _____

Turn over for next question

4

4 Express the following as single fractions

Give your answers in their simplest forms.

4(a) $\frac{3x+1}{6}+\frac{2x-2}{4}$

[2 marks]

Answer _____

4(b) $\frac{4}{2x-2}+\frac{10}{x-1}$

[2 marks]

Answer _____

4(c) $\frac{3(x+1)}{5x}+\frac{2x}{2x+2}$

[2 marks]

Answer _____

Turn over for next question

6

5 Simplify fully,

5(a) $\dfrac{4x^2 + 16x}{x^2 - 16}$

[2 marks]

Answer _____

5(b) $\dfrac{2x + 4}{x + 1} \div \dfrac{x^2 + x - 2}{2x^2 + 5x + 3}$

[3 marks]

Answer _____

Turn over for next question

5

6 Circle **two** of the expressions below which are equivalent.

[2 marks]

$$\frac{1}{x+4} \qquad \frac{x-4}{x^2+16}$$

$$\frac{x+2}{x^2+6x+8} \qquad \frac{x+4}{x^2+5x+6}$$

7 Simplify fully,

7(a) $\dfrac{x-5}{x^2-25}$

[1 mark]

Answer _____

7(b) $\dfrac{x^2+x-6}{x^2-x-12}$

[2 marks]

Answer _____

Turn over for next question

5

8 Solve $\frac{1}{2x-3}+\frac{4}{x+1}=1$

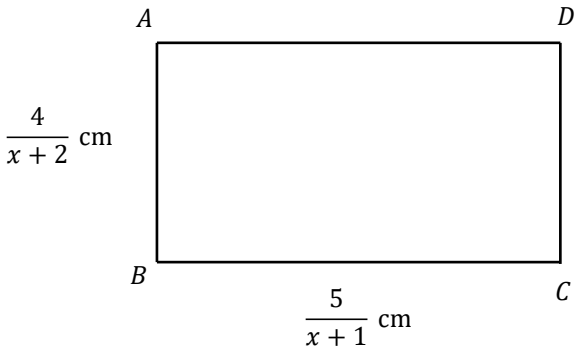
A solution by trial and improvement will not be accepted.

[4 marks]

Answer _____

9 The diagram below shows a rectangle.

Not drawn accurately



The perimeter of the rectangle is equal to 5 times the area.

Find the value of x.

[5 marks]

Answer _____

5

END