Name: _____

ASM Tuition Academy

Algebraic Fractions

Instructions:

- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided
  - there may be more space than you need.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all you're working out.**

Information:

- 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.
- Keep an eye on time.
- Try to answer every question.
- Check your answers if you have time at the end.

Q1- Simplify fully:

$(x^2 + 6x) / (x^2 + 8x + 12)$

.....

(Total for question 1 is 2 marks)

Q2- Simplify fully:

$(x^2 + 7x + 12) / (x^2 + 9x + 20)$

.....

(Total for question 2 is 2 marks)

Q3- Simplify fully:

$(4x^2 + 16x) / (x^2 - 16)$

.....

(Total for question 3 is 2 marks)

Q4- Simplify fully:

$(x + 3) / (x^2 - 9)$

.....

(Total for question 4 is 2 marks)

Q5- Write:

$(5x^2 + 12x + 4) / (x^2 + 4x + 4)$

in the form:

$(ax + b) / (x + c)$

where a, b, and c are integers.

.....

(Total for question 5 is 3 marks)

Q6- Write:

$(x^2 + 10x + 24) / (2x^2 + 16 + 32)$

in the form:

$(x + a) / (bx + c)$

where a, b, and c are integers.

.....

(Total for question 6 is 3 marks)

Q7- Simplify fully:

$(3x + 6) / (x - 3) \div (2x^2 + 9x + 10) / (x^2 - 3x)$

.....

(Total for question 7 is 3 marks)

Q8- Simplify fully:

$(2x - 2) / (x + 1) \div (x^2 - 4x + 3) / (4x^2 + 19x + 15)$

.....

(Total for question 8 is 3 marks)

Q9- Solve:

$16 / (x + 3) + 6 / (x + 8) = 2$

.....

(Total for question 9 is 4 marks)

Q10- Solve $4 / (3x - 2) + 3 / (x + 1) = 1$

.....

(Total for question 10 is 4 marks)

Q11- Solve: 4 / (5 - x) + 6 / (x + 7) = 2

.....

(Total for question 11 is 4 marks)

Q12- Solve: 14 / (x + 1) - 8 / (3x - 2) = 2

.....

(Total for question 12 is 4 marks)

Q13- Given that: 2x + 1 : x + 2 = x + 4 : 3x - 4

Find the possible values of x.

.....

(Total for question 13 is 4 marks)

Q14- Given that: 2x - 2 : 2x - 3 = 2x + 4 : 3x - 2

Find the possible values of x.

.....

(Total for question 14 is 4 marks)

Q15- Given that: 2x + 18 : 5x - 1 = 2x + 14 : 2x - 3

Find the possible values of x.

.....

(Total for question 15 is 4 marks)

Q16- Given that: 5 - 3x : 18 - 2x = 3x + 7 : 8 - 2x

Find the possible values of x.

.....

(Total for question 16 is 4 marks)