Mark scheme

Algebraic fractions

Mathematics 0580 · Questions from Paper 2 and Paper 4

Total marks

36

MARKS FOR EACH QUESTION

1	2	3	4	5	6	7	8	9	10	Total
2	2	3	3	4	4	4	4	5	5	**36**

Question 1 [2]

1	(a)	$\frac{3x}{2}$ oe final answer	1	
	(b)	$\frac{x^2+2}{x}$ oe final answer	1	

Question 2 [2]

2	$\frac{5x-3}{6}$	2	**B1** for $5x-3$ seen **SC1** $\frac{5}{6}x-\frac{3}{6}$ on answer line

Question 3 [3]

3	$\frac{1}{x(x+1)}$ oe final answer nfww	3	**B1** for common denominator $x(x+1)$ oe **M1** for $x+1-x$

Question 4 [3]

4	$\frac{h}{h-4}$ final answer	3	**B1** for $h(h+4)$ isw **B1** for $(h+4)(h-4)$ isw

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Question 5 **[4]**

5(a)	$\frac{p}{2}$ final answer	**2**	**M1** for $\frac{p}{t}\times\frac{t}{2}$ or for cross cancelling of t
5(b)	$\frac{x+2}{4}$ or $\frac{x}{4}+\frac{1}{2}$ final answer	**2**	**M1** for $\frac{3x-2(x-1)}{4}$ oe If 0 scored, **SC1** for final answer $\frac{x-2}{4}$ oe

Question 6 **[4]**

6	$\frac{8x}{(x-3)(x+1)}$	**4**	**B1** for common denominator $(x-3)(x+1)$ seen **B1** for $(x+3)(x+1)-(x-1)(x-3)$ soi **B1** for $x^2+3x+x+3$ or $x^2-3x-x+3$ soi

Question 7 **[4]**

7	$\frac{2x+3}{x+7}$ final answer	**4**	**B2** for $(2x+3)(x-7)$ or **B1** for $2x(x-7)+3(x-7)$ or $x(2x+3)-7(2x+3)$ or $(2x+a)(x+b)$ where $ab=-21$ or $a+2b=-11$ **B1** for $(x+7)(x-7)$

Question 8 **[4]**

8	$\frac{3y-5}{2(x-12)}$ or $\frac{3y-5}{2x-24}$ final answer	**4**	**SC3** for answer $\frac{3y-5}{x-12}$ or **B3** for $(3y-5)(x+12)$ **and** $2(x-12)(x+12)$ or $(2x-24)(x+12)$ or **B2** for $(3y-5)(x+12)$ or $2(x-12)(x+12)$ or $(2x-24)(x+12)$ or $(2x+24)(x-12)$ or **B1** for $3y(x+12)-5(x+12)$ or $x(3y-5)+12(3y-5)$ or $2(x^2-144)$ or $(x-12)(x+12)$

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Question 9 **[5]**

9	**(a)** $\frac{x-2y}{xy}$	2	**B1** correct numerator **B1** correct denominator
	(b) $\frac{x}{3}$ www	3	**M1** $x(x+1)$ **M1** $3(x+1)$

Question 10 **[5]**

10(a)	$\frac{3p}{5y}$ final answer cao	**2**	**B1** for $\frac{15p}{25y}$ or $\frac{3mp}{5my}$ final answer or for correct answer spoilt
10(b)	$\frac{11x-29}{(2x-5)(x-3)}$ final answer or $\frac{11x-29}{2x^2-11x+15}$ final answer	**3**	**B1** for $3(x-3)+4(2x-5)$ or better seen **B1** for common denominator of $(2x-5)(x-3)$ oe isw

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