Mark scheme

Changing the subject when it appears twice

Mathematics 0580 · Paper 2 (Extended)

Total marks

34

MARKS FOR EACH QUESTION

1	2	3	4	5	6	7	8	9	10	Total
2	2	3	3	4	4	4	4	4	4	**34**

Question 1 [2]

1	$m = \frac{J}{v-u}$	2	**M1** $m(v-u)$ seen

Question 2 [2]

2	$\frac{P}{2+\pi}$	**2**	**M1** for $P = r(2+\pi)$

Question 3 [3]

3	$p = \frac{c}{a-x}$	**3**	**M1** one correct move **M1** second correct move **M1** third correct move marked on answer line

Question 4 [3]

4	$p = \frac{8r-5}{r-3}$ oe final answer	**3**	**M1** for correctly collecting terms in p on one side and terms not in p on the other side **M1** for correct factorising **M1** for correct division dependent on p appearing only once in a factorised expression Maximum M2 for an incorrect final answer

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Question 5 **[4]**

5	$x = \dfrac{3}{P-1}$	4	**M1** for each of the four moves completed correctly

Question 6 **[4]**

6	$\dfrac{g}{2m+g}$ final answer	**4**	**M1** for expanding brackets or $\div g$ **M1** for isolating terms in h **M1** for factorising **M1** for dividing by bracket to isolate h Incorrect/unsimplified final answer scores max 3 marks

Question 7 **[4]**

7	$\dfrac{2x}{3+x}$ oe final answer	**4**	**M1** for correctly clearing the denominator and expanding bracket **M1** for correctly collecting terms in m on one side and terms not in m on the other **M1** for correct factorising **M1** for correct division dependent on m appearing only once in a factorised expression

Question 8 **[4]**

8	$m = \dfrac{2k}{(2-R)}$ or $m = \dfrac{-2k}{(R-2)}$ final answer	**4**	**M1** for clearing fractions **M1** for expanding brackets (or $\div 2$) **M1** for collecting terms in m on one side and terms not in m on the other **M1** for dividing by a bracket maximum of **3** if final answer incorrect

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Question 9 **[4]**

9	$\frac{12m}{p-4y}$ or $\frac{-12m}{4y-p}$ final answer	**4**	**M1** for $12m + 4xy = xp$ or $3m = \frac{xp}{4} - xy$ **M1** for $12m = xp - 4xy$ or $3m = x(\frac{p}{4} - y)$ **M1** for $12m = x(p - 4y)$ or $\frac{3m}{\frac{p}{4} - y} = x$ **M1** for $\frac{12m}{p-4y}$ To a maximum of 3 marks for an incorrect answer

Question 10 **[4]**

10	$[t =]\frac{m}{2p+m}$ final answer	**4**	**M1** for correctly clearing *their* fraction **M1** for correct expansion **M1** for correctly collecting *their* terms in t on one side and other terms on the other side, not dividing by $1 - t$ **M1** for correct factorisation and division of *their* two-term expression in t To a maximum of 3 marks for an incorrect answer

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