

IGCSE Maths 4MA1 Algebraic Fractions and Rearranging Formulae Practice Exam: Mark Scheme

Pearson Edexcel International GCSE Mathematics A (4MA1), Higher tier · 15 questions · 45 marks

- M marks are for a correct method; A marks for an accurate answer that follows a correct method.
- Accept any correct method that reaches a correct answer, unless the question says which method to use.
- Practise these topics online with instant feedback: [igcsemathrevision.com/igcse-unit.html?course=igcse&unit=2](https://www.igcsemathrevision.com/igcse-unit.html?course=igcse&unit=2)

Question 1

2 marks

M1 collects x terms on one side and factorises, e.g. $x(c - a) = b$

A1 $x = b/(c - a)$ oe

Final answer: $x = \frac{b}{c - a}$

Question 2

2 marks

M1 $P = a(2 + b)$

A1 $a = P/(2 + b)$

Final answer: $a = \frac{P}{2 + b}$

Question 3

3 marks

M1 multiplies all terms by 15 (or common denominator)

M1 $5(x + 4) - 3(x - 2) = 30$ with correct signs

A1 $x = 2$

Final answer: $x = 2$

Question 4

3 marks

M1 $5(x - 2) = 3(x + 1)$

M1 $5x - 10 = 3x + 3$ (collects terms)

A1 $x = 6.5$ oe

Final answer: $x = 6.5$

Question 5

3 marks

M1 common denominator $2x$, e.g. $8/(2x) + 3/(2x)$

M1 $11/(2x) = 11/2$ or $22 = 11x$ oe

A1 $x = 1$

Final answer: $x = 1$



Question 6**3 marks**

M1 collects p terms, e.g. $3p - pr = -2 - q$

M1 factorises $p(3 - r)$

A1 $p = (q + 2)/(r - 3)$ oe

Final answer: $p = \frac{q + 2}{r - 3}$

Question 7**3 marks**

M1 $y(x - 5) = x + 2$

M1 $xy - x = 5y + 2$ and factorises $x(y - 1)$

A1 $x = (5y + 2)/(y - 1)$ oe

Final answer: $x = \frac{5y + 2}{y - 1}$

Question 8**3 marks**

M1 $x(x + 1) - 2(x - 3) = (x - 3)(x + 1)$

M1 expands and cancels x^2 correctly, e.g. $-x + 6 = -2x - 3$

A1 $x = -9$

Final answer: $x = -9$

Question 9**3 marks**

M1 $(x - 2)(x + 3) = 6$

M1 $x^2 + x - 12 = 0$ and factorises $(x + 4)(x - 3)$

A1 $x = 3, x = -4$

Final answer: $x = 3, x = -4$

Question 10**3 marks**

M1 $km + 4k = 2m - 3$

M1 $km - 2m = -3 - 4k$ and factorises $m(k - 2)$

A1 $m = (4k + 3)/(2 - k)$ oe

Final answer: $m = \frac{4k + 3}{2 - k}$

Question 11**3 marks**

M1 $Em + 2E = mv + mu$

M1 factorises $m(E - v - u) = -2E$ oe

A1 $m = 2E/(v + u - E)$ oe

Final answer: $m = \frac{2E}{v + u - E}$



Question 12**3 marks**

M1 recognises $x^2 - 4 = (x - 2)(x + 2)$ as common denominator

M1 $(x + 2) + (x - 2) = 3$

A1 $x = 1.5$ oe

Final answer: $x = \frac{3}{2}$

Question 13**3 marks**

M1 multiplies through by xy : $fy + fx = xy$

M1 $fy = x(y - f)$

A1 $x = fy/(y - f)$ oe

Final answer: $x = \frac{fy}{y - f}$

Question 14**4 marks**

M1 $2[2(x + 2) - (x - 1)] = (x - 1)(x + 2)$ oe

M1 $x^2 - x - 12 = 0$ oe

M1 $(x - 4)(x + 3) = 0$ or correct formula

A1 $x = 4, x = -3$

Final answer: $x = 4, x = -3$

Question 15**4 marks**

M1 (a) $xy - 2x = 4y + 1$

M1 $y(x - 4) = 2x + 1$

A1 $y = (2x + 1)/(x - 4)$ oe

B1 (b) 6.5 oe (ft their (a))

Final answer: (a) $y = \frac{2x + 1}{x - 4}$ (b) 6.5

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