

IGCSE Maths 4MA1 Number Practice Exam: Mark Scheme

Pearson Edexcel International GCSE Mathematics A (4MA1), Higher tier · 15 questions · 50 marks

- M marks are for a correct method; A marks for an accurate answer that follows a correct method; B marks are independent of 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=1

Question 1

1 mark

B1 4/9

Final answer: $\frac{4}{9}$

Question 2

2 marks

M1 multiplies numerator and denominator by $\sqrt{6}$, e.g. $12\sqrt{6}/6$

A1 $2\sqrt{6}$ cao

Final answer: $2\sqrt{6}$

Question 3

2 marks

M1 $x = 0.999\dots$ and $10x = 9.999\dots$ with intention to subtract

A1 $9x = 9 \Rightarrow x = 1$ (cso)

Final answer: 1 (shown)

Question 4

2 marks

M1 0.08×100^3 or $0.08 \times 1\,000\,000$

A1 80 000 cao

Final answer: 80 000 cm^3

Question 5

3 marks

M1 price per litre (or litres per £) for at least one size, e.g. $4.20 \div 1.5 = 2.80$

M1 comparable figures for all three sizes: 2.80, 2.70, 2.76

A1 2 litres, with correct figures

Final answer: The 2 litre size (£2.70 per litre)

Question 6

3 marks

M1 $7 - (2 + 3) = 2$ parts

M1 2 parts = £150, so 1 part = £75

A1 £900

Final answer: £900



Question 7**3 marks****M1** $2450 \times 3 (= 7350)$ **M1** $7350 \div 11.4 \div 1.17$ or $7350 \div 13.338$ **A1** 551.06 cao**Final answer:** £551.06**Question 8****3 marks****M1** converts to the same units, e.g. 480 cm and 360 cm**M1** $480 \div 40 \times 360 \div 40$ or $172\,800 \div 1600$ **A1** 108 cao**Final answer:** 108 tiles**Question 9****4 marks****B1** (a) $2^2 \times 3^2$ **M1** (b) $2^3 \times 3^4 \times 5 \times 7$ **A1** 22 680**B1** (c) 10**Final answer:** (a) $2^2 \times 3^2 (= 36)$ (b) 22 680 (c) 10**Question 10****4 marks****M1** (a) repeated division by primes, e.g. $1764 = 4 \times 441$ **A1** $2^2 \times 3^2 \times 7^2$ **B1** (b) $2 \times 3 \times 7 = 42$ **B1** (c) 42**Final answer:** (a) $2^2 \times 3^2 \times 7^2$ (b) 42 (c) 42**Question 11****4 marks****B1** (a) $\frac{5}{20} - \frac{4}{20} = \frac{1}{20}$ **M1** (b) writes each term as a difference, e.g. $\frac{1}{30} = \frac{1}{5} - \frac{1}{6}$, $\frac{1}{42} = \frac{1}{6} - \frac{1}{7}$, $\frac{1}{56} = \frac{1}{7} - \frac{1}{8}$ (or uses the common denominator 840)**M1** the sum collapses to $\frac{1}{4} - \frac{1}{8}$ (or $\frac{42+28+20+15}{840} = \frac{105}{840}$)**A1** $\frac{1}{8}$ **Final answer:** (b) $\frac{1}{8}$ 

Question 12**4 marks**

M1 width = $\frac{35}{4} \div \frac{10}{3}$

M1 $\frac{35}{4} \times \frac{3}{10} = \frac{105}{40} = \frac{21}{8}$ m

M1 $2 \left(\frac{10}{3} + \frac{21}{8} \right) = 2 \left(\frac{80}{24} + \frac{63}{24} \right)$

A1 $\frac{286}{24} = \frac{143}{12} = 11 \frac{11}{12}$ m (shown)

Final answer: width $2 \frac{5}{8}$ m; perimeter $\frac{143}{12} = 11 \frac{11}{12}$ m

Question 13**5 marks**

M1 (a) $\frac{50 \times 0.03}{0.2^2}$

A1 37.5

M1 (b) $\frac{1.28081}{0.046225}$ or 27.708...

A1 27.7

B1 (c) overestimate: both numbers in the numerator were rounded up and the number in the denominator was rounded down

Final answer: (a) 37.5 (b) 27.7 (c) overestimate

Question 14**5 marks**

B1 (a) 5.22

B1 (b) 1450

B1 (c) 3600

B1 (d) $40 = 2^3 \times 5$ has no prime factors other than 2 and 5, so $\frac{7}{40}$ terminates ($= 0.175$)

B1 $30 = 2 \times 3 \times 5$ has the prime factor 3 (and $\frac{7}{30}$ is in its simplest form), so it recurs ($0.2\bar{3}$)

Final answer: (a) 5.22 (b) 1450 (c) 3600 (d) $40 = 2^3 \times 5$; 30 has a factor 3

Question 15**5 marks**

B1 (a) 4.7×10^{-4}

M1 (b) converts to a common form, e.g. 0.0032, 0.031, 0.0031, 0.003

A1 0.3×10^{-2} , 31×10^{-4} , 3.2×10^{-3} , 0.031

M1 (c) $ab = 20 \times 10^{3n}$

A1 $2 \times 10^{3n+1}$

Final answer: (a) 4.7×10^{-4} (b) 0.3×10^{-2} , 31×10^{-4} , 3.2×10^{-3} , 0.031 (c) $2 \times 10^{3n+1}$

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