

Answer Key — Area of Rectangles — Formula

Year 4 Mathematics · Measurement and geometry · WA4MMGME1

Section A — Fluency (16 marks, 1 mark each)

1. 24cm^2
2. 45cm^2
3. 56cm^2
4. 36cm^2
5. 60cm^2
6. 44cm^2
7. 64cm^2
8. 30cm^2
9. 81cm^2
10. 65cm^2
11. 84cm^2
12. 60cm^2
13. 77cm^2
14. 64cm^2
15. 90cm^2
16. 144cm^2

Section B — Core (21 marks)

1. Area = $9 \times 6 = 54\text{m}^2$. [2 marks working, 1 mark correct answer]
2. Area = $8 \times 5 = 40\text{m}^2$; packets = $40 \div 2 = 20$ packets. [2 marks area, 2 marks packets]
3. Area = $70 \times 50 = 3500\text{cm}^2$. [2 marks working, 1 mark correct answer]
4. Area = $12 \times 6 = 72\text{m}^2$; cost = $72 \times \$9 = \$648$. [2 marks area, 2 marks cost]
5. Area = $4.5 \times 3 = 13.5\text{m}^2$. [2 marks working, 1 mark correct answer]
6. Area = $5 \times 2.4 = 12\text{m}^2$; tins = $12 \div 6 = 2$ tins. [2 marks area, 2 marks tins]

Section C — Reasoning (9 marks) — sample responses, award marks for valid reasoning

1. Multiplying length by width counts how many 1-unit $\times$ 1-unit squares fit inside the rectangle, forming rows and columns, whereas adding only compares the edges, not the space covered. [2 marks]
2. The student has compared the perimeters (sums of the sides), not the areas. The correct areas are $10 \times 2 = 20\text{cm}^2$ and $6 \times 6 = 36\text{cm}^2$ — they are not equal. [2 marks]
3. Area measures a two-dimensional space (covering both length and width at once), so the unit must represent a square of that size, not just a single length. [2 marks]
4. True, as long as the width stays the same — e.g. a rectangle $4\text{cm} \times 3\text{cm}$ has area 12cm^2 ; doubling the length to 8cm gives $8 \times 3 = 24\text{cm}^2$, which is double. [3 marks]

Section D — Challenge (7 marks)

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1. Length = $48 \div 6 = 8\text{cm}$. [2 marks]
2. Rectangle's area = $9 \times 4 = 36\text{cm}^2$; square side = $\sqrt{36} = 6\text{cm}$. [2 marks]
3. Let width = w , length = $3w$. Area = $3w^2 = 48$, so $w^2 = 16$, $w = 4\text{m}$ (width), and length = 12m . [2 marks correct method, 1 mark both correct values]