



## 3.18F Area of Compound Shapes: Foundation Tier Practice

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 60 minutes

Total Marks

Name: \_\_\_\_\_ Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

**Answer ALL questions. Show all your working.**

- 1** Work out the area of a rectangle that is 7 m long and 3 m wide.

(Total for Question 1 is 1 mark)

- 2** A triangle has base 8 cm and height 5 cm. Work out its area.

(Total for Question 2 is 2 marks)

- 3** The shape is made of a rectangle 6 cm by 4 cm with a right-angled triangle on top. The triangle has base 6 cm and height 3 cm. Work out the total area of the shape.

(Total for Question 3 is 3 marks)

- 4** A rectangular paving slab has area  $48 \text{ m}^2$  and length 6 m. Work out the width of the slab.

(Total for Question 4 is 2 marks)

- 5 Find the area of the L-shaped figure made from two rectangles. Rectangle A is 5 m by 2 m and rectangle B is 3 m by 2 m, joined as shown so their widths line up (they share a 2 m side). Work out the total area.

(Total for Question 5 is 3 marks)

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- 6 Work out the area of a trapezium with parallel sides 7 cm and 3 cm and height 4 cm. (Use area =  $(1/2) \times (\text{sum of parallel sides}) \times \text{height}$ .)

(Total for Question 6 is 3 marks)

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- 7 A roof tile is shaped like a rectangle 12 cm by 8 cm with a small isosceles triangle attached along the short side. The triangle has base 8 cm and height 3 cm. Work out the area of one tile.

(Total for Question 7 is 4 marks)

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- 8 A classroom notice board is a compound shape: a rectangle 2.0 m by 1.2 m with a small rectangle of 0.4 m by 0.6 m removed from one corner. Work out the area of the notice board to 2 decimal places in square metres.

(Total for Question 8 is 5 marks)

- 9** Work out the area of a parallelogram with base 9 cm and perpendicular height 4 cm.

(Total for Question 9 is 2 marks)

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- 10** Two congruent right-angled triangles each have legs 6 cm and 8 cm. They are joined along the 8 cm sides to form a kite. Work out the area of the kite.

(Total for Question 10 is 3 marks)

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- 11** A garden is made from a large rectangle 8.0 m by 5.0 m. A small rectangular pond 3.0 m by 2.0 m is removed from one corner. A triangular flowerbed with base 4.0 m and height 1.5 m is added along one long edge of the large rectangle. Work out the total area of the garden.

(Total for Question 11 is 6 marks)

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- 12** A notice panel is a rectangle measuring 120 cm by 80 cm. A triangular corner is cut away; the triangle has base 30 cm and height 40 cm. Work out the area of the remaining panel in square metres. Give your answer to 2 decimal places.

(Total for Question 12 is 6 marks)

## Mark scheme · 3.18F Area of Compound Shapes: Foundation Tier Practice

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### Question 1

- **B1**  $21 \text{ m}^2$  cao
- **Answer:  $21 \text{ m}^2$**

### Question 2

- **M1** uses  $\frac{1}{2} \times \text{base} \times \text{height}$  or equivalent method
- **A1**  $20 \text{ cm}^2$  cao
- **Answer:  $20 \text{ cm}^2$**

### Question 3

- **M1** area rectangle =  $6 \times 4 = 24 \text{ cm}^2$  or equivalent
- **M1** area triangle =  $\frac{1}{2} \times 6 \times 3 = 9 \text{ cm}^2$  or equivalent
- **A1**  $33 \text{ cm}^2$  cao ( $24 + 9$ )
- **Answer:  $33 \text{ cm}^2$**

### Question 4

- **M1** uses width = area / length or equivalent
- **A1**  $8 \text{ m}$  cao
- **Answer:  $8 \text{ m}$**

### Question 5

- **M1** area rectangle A =  $5 \times 2 = 10 \text{ m}^2$
- **M1** area rectangle B =  $3 \times 2 = 6 \text{ m}^2$
- **A1**  $16 \text{ m}^2$  cao ( $10 + 6$ )
- **Answer:  $16 \text{ m}^2$**

### Question 6

- **M1** substitute into formula:  $\frac{1}{2} \times (7+3) \times 4$  or equivalent
- **M1** compute  $\frac{1}{2} \times 10 \times 4 = 20$
- **A1**  $20 \text{ cm}^2$  cao
- **Answer:  $20 \text{ cm}^2$**

### Question 7

- **M1** area rectangle =  $12 \times 8 = 96 \text{ cm}^2$
- **M1** area triangle =  $\frac{1}{2} \times 8 \times 3 = 12 \text{ cm}^2$
- **A1** compute total  $96 + 12 = 108 \text{ cm}^2$
- **A1**  $108 \text{ cm}^2$  cao
- **Answer:  $108 \text{ cm}^2$**

### Question 8

- **M1** area large rectangle =  $2.0 \times 1.2 = 2.4 \text{ m}^2$
- **M1** area small removed rectangle =  $0.4 \times 0.6 = 0.24 \text{ m}^2$
- **M1** subtract removed area:  $2.4 - 0.24 = 2.16$
- **A1** give  $2.16 \text{ m}^2$  to 2 decimal places
- **A1**  $2.16 \text{ m}^2$  cao
- **Answer:  $2.16 \text{ m}^2$**

### Question 9

- **M1** uses area = base  $\times$  height:  $9 \times 4$
- **A1**  $36 \text{ cm}^2$  cao
- **Answer:  $36 \text{ cm}^2$**

#### Question 10

- **M1** area of one right triangle =  $\frac{1}{2} * 6 * 8 = 24 \text{ cm}^2$
- **M1** two triangles area =  $24 * 2 = 48 \text{ cm}^2$
- **A1**  $48 \text{ cm}^2$  cao
- **Answer:  $48 \text{ cm}^2$**

#### Question 11

- **M1** area large rectangle =  $8.0 * 5.0 = 40.0 \text{ m}^2$
- **M1** area pond =  $3.0 * 2.0 = 6.0 \text{ m}^2$
- **M1** area triangle =  $\frac{1}{2} * 4.0 * 1.5 = 3.0 \text{ m}^2$
- **A1** subtract pond:  $40.0 - 6.0 = 34.0 \text{ m}^2$
- **A1** add triangle:  $34.0 + 3.0 = 37.0 \text{ m}^2$
- **A1**  $37.0 \text{ m}^2$  cao
- **Answer:  $37.0 \text{ m}^2$**

#### Question 12

- **M1** area rectangle =  $120 * 80 = 9600 \text{ cm}^2$
- **M1** area triangle =  $\frac{1}{2} * 30 * 40 = 600 \text{ cm}^2$
- **M1** subtract triangle:  $9600 - 600 = 9000 \text{ cm}^2$
- **M1** convert to  $\text{m}^2$ :  $9000 \text{ cm}^2 = 9000 / 10000 = 0.9 \text{ m}^2$
- **A1** give value to 2 dp:  $0.90 \text{ m}^2$
- **A1**  $0.90 \text{ m}^2$  cao
- **Answer:  $0.90 \text{ m}^2$**