

**CHAPTER 9 Areas****EXERCISE 9a (p. 149)**

Revises areas of rectangles, parallelograms and triangles

- |                              |                                    |
|------------------------------|------------------------------------|
| 1. $20\text{cm}^2$           | 10. 4cm                            |
| 2. $10\text{cm}^2$           | 11. $450\text{mm}^2$               |
| 3. $17\text{cm}^2$           | 12. 5cm                            |
| 4. $19.35\text{cm}^2$        | 13. 5m, $25\text{m}^2$             |
| 5. 12 sq. units              | 14. 4cm                            |
| 6. 30 sq. units              | 15. a) $17.5\text{cm}^2$ b) 5.83cm |
| 7. 12 sq. units              | 16. a) $12\text{cm}^2$ b) 3.43cm   |
| 8. 16 sq. units              | 17. a) $40\text{cm}^2$ b) 6.67cm   |
| 9. $24\frac{1}{2}$ sq. units | 18. a) $7\text{cm}^2$ b) 2cm       |

**EXERCISE 9b (p. 151)**

Revises areas of compound shapes.

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|--------------------|--------------------|-----------------------|
| 1. $60\text{cm}^2$ | 3. $30\text{cm}^2$ | 5. $135\text{cm}^2$   |
| 2. $40\text{cm}^2$ | 4. $45\text{cm}^2$ | 6. $27.75\text{cm}^2$ |

**EXERCISE 9c (p. 153)**

It is worth showing, by expanding  $\frac{1}{2}(p+q) \times h$ , that this is an alternative way of writing  $\frac{1}{2}ph + \frac{1}{2}qh$ , because “common factors” have not been covered at this stage.

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|----------------------|-----------------|------------------|
| 1. $42\text{cm}^2$   | 5. 30 sq. units | 9. 84 sq. units  |
| 2. $94.5\text{cm}^2$ | 6. 33 sq. units | 10. 47 sq. units |
| 3. $21\text{cm}^2$   | 7. 56 sq. units |                  |
| 4. $8.75\text{cm}^2$ | 8. 16 sq. units |                  |

**EXERCISE 9d (p. 155)**

This and the next exercise can be omitted, or used for discussion only.

- Area of each parallelogram is  $35\text{cm}^2$
- Area of each triangle is  $28\text{cm}^2$
- Each parallelogram has a base of length 4 units and height of 3 units. The areas are each equal to 12 sq. units.
- Each base is 6 units long. Each height is 3 units. The areas are equal to 9 sq. units.
- Ratio of heights is 4 : 5 : 7 : 9. Ratio of areas is 4 : 5 : 7 : 9.  
The ratio of areas is equal to the ratio of heights.
- The  $y$  coordinate of D is 9 (or  $-7$  if drawn below the  $x$ -axis)
- The  $y$  coordinate of E is 3 (or  $-1$  if drawn below the  $x$ -axis)

**EXERCISE 9e (p. 157)**

Use for discussion for everyone. Only the most able should attempt these on their own. It is particularly difficult to produce a *reasoned* answer for Number 11. For Numbers 12 and 13 pupils need to be reminded how to construct parallel lines.

- 7. 12cm
- 8. 2 : 1
- 9. 14cm
- 10. 8cm

- 11.  $30^\circ$
- 12.  $\triangle BEC = 27\text{cm}^2$ ,  $\triangle DEC = 12\text{cm}^2$
- 13.  $132^\circ$
- 14. 6cm