

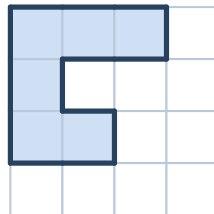
GCSE Maths: Perimeter and area of rectangles and squares (Foundation): answers

GCSE Maths - Perimeter, Area and Circles - Foundation - Lesson 18.1

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at websink.site/gcse/maths/ch18-perimeter-area-circles/foundation/perimeter-and-area-of-rectangles-and-squares/

Exercise 18A Perimeter and area of rectangles and squares Non-calculator

- 1 Each square on the grid has sides of 1 cm. Work out (a) the area and (b) the perimeter of the shape.



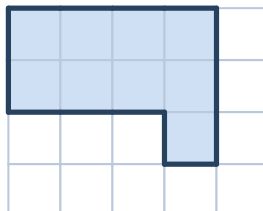
- (a) area

Answer: 6 cm²

- (b) perimeter

Answer: 14 cm

- 2 Each square on the grid has sides of 1 cm. Work out (a) the area and (b) the perimeter of the shape.



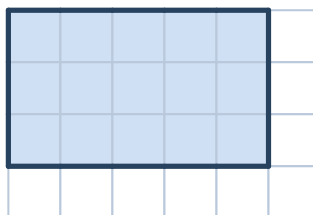
- (a) area

Answer: 9 cm²

- (b) perimeter

Answer: 14 cm

- 3 Each square on the grid has sides of 1 cm. Work out the perimeter and the area of this rectangle.



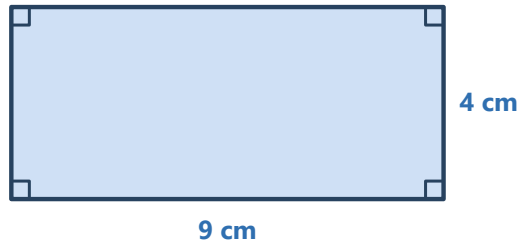
- (a) perimeter

Answer: 16 cm

(b) area

Answer: 15 cm^2

- 4 Work out (a) the perimeter and (b) the area of the rectangle.



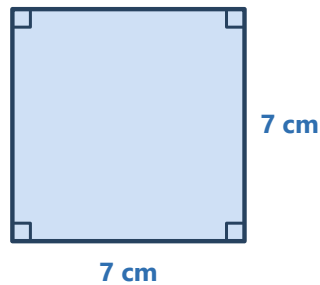
(a) perimeter

Answer: 26 cm

(b) area

Answer: 36 cm^2

- 5 A square has sides of length 7 cm. Work out (a) its perimeter and (b) its area.



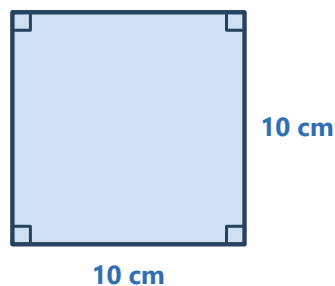
(a) perimeter

Answer: 28 cm

(b) area

Answer: 49 cm^2

- 6 A square has sides of length 10 cm. Write down (a) its perimeter and (b) its area. Say why the two answers have different units.



(a) perimeter

Answer: 40 cm

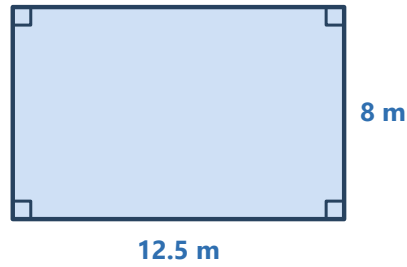
(b) area

Answer: 100 cm²

(c) Why are the units different?

Answer: Perimeter is a length (cm); area counts squares (cm²)

7 Work out (a) the area and (b) the perimeter of this rectangle.



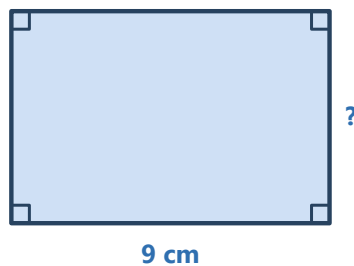
(a) area

Answer: 100 m²

(b) perimeter

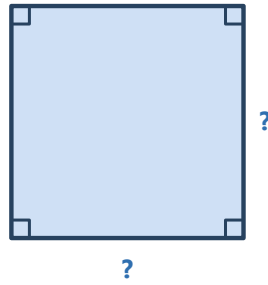
Answer: 41 m

8 The area of this rectangle is 54 cm². Work out the width of the rectangle.



Answer: 6 cm

9 A square has a perimeter of 36 cm. Work out (a) the length of one side and (b) the area of the square.



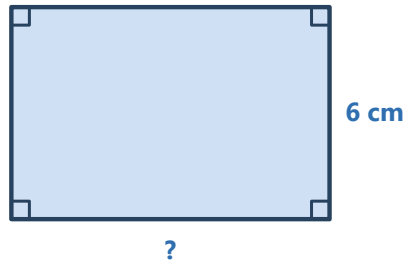
(a) side

Answer: 9 cm

(b) area

Answer: 81 cm²

10 A rectangle has perimeter 30 cm and width 6 cm. Work out (a) its length and (b) its area.



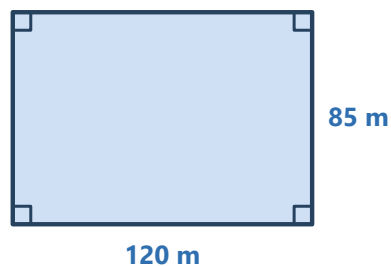
(a) length

Answer: 9 cm

(b) area

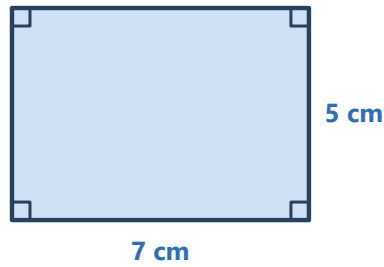
Answer: 54 cm²

11 A farmer is putting a fence all the way round a rectangular field, 120 m by 85 m. Fencing costs £6 per metre. Work out the total cost of the fencing.



Answer: £2,460

12 Aisha says: "A rectangle 7 cm by 5 cm has an area of 24 cm² because $7 + 5 + 7 + 5 = 24$." Explain her mistake and work out the correct area.



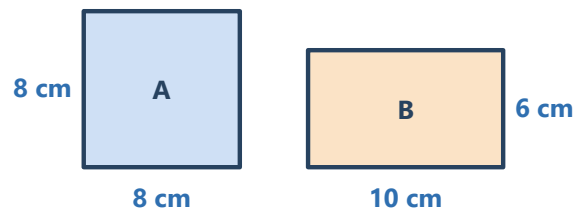
Answer: She found the perimeter; area = 35 cm^2

- 13** The length of this rectangle is 3 times its width. The perimeter is 48 cm. Work out the area of the rectangle.



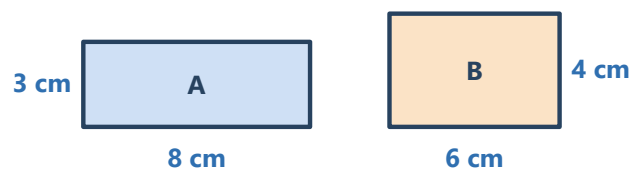
Answer: 108 cm^2

- 14** Shape A is a square with sides 8 cm. Shape B is a rectangle with length 10 cm. They have the same perimeter. Work out the area of each shape and say which has the bigger area.



Answer: $A = 64 \text{ cm}^2$, $B = 60 \text{ cm}^2$; the square is bigger

- 15** Rectangle A is 8 cm by 3 cm. Rectangle B is 6 cm by 4 cm. Show that the two rectangles have the same area but different perimeters.



Answer: Both areas 24 cm^2 ; perimeters 22 cm and 20 cm

- 16** A rectangle has an area of 36 cm^2 . Its sides are whole numbers of centimetres. Find all the possible perimeters of the rectangle. Which rectangle has the smallest perimeter?



Answer: Perimeters 74, 40, 30, 26, 24 cm; smallest 24 cm (6 by 6)