

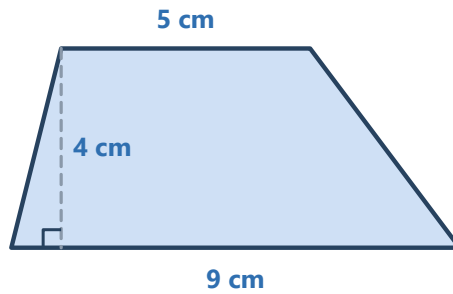
GCSE Maths: Area of trapezia (Higher): answers

GCSE Maths - Perimeter, Area and Circles - Higher - Lesson 18.3

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/higher/area-of-trapezia/

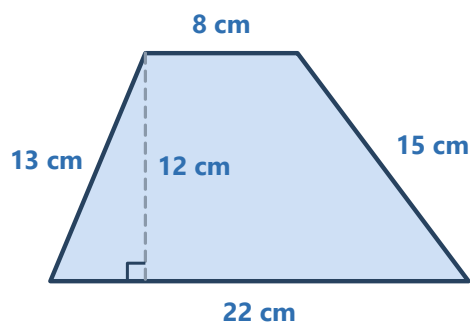
Exercise 18C Trapezia Non-calculator

- 1 Work out the area of this trapezium.



Answer: 28 cm^2

- 2 Work out (a) the area and (b) the perimeter of this trapezium.



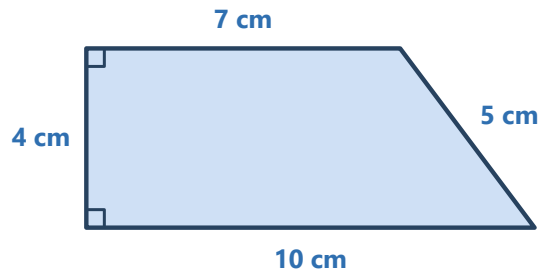
- (a) area

Answer: 180 cm^2

- (b) perimeter

Answer: 58 cm

- 3 Work out (a) the area and (b) the perimeter of this trapezium.



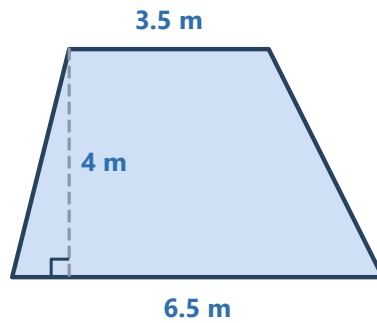
(a) area

Answer: 34 cm^2

(b) perimeter

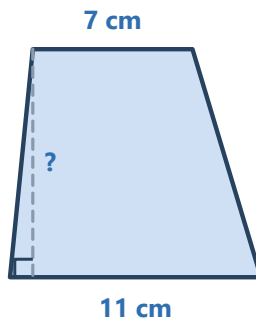
Answer: 26 cm

4 Work out the area of this trapezium.



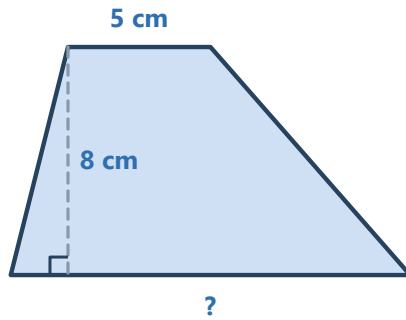
Answer: 20 m^2

5 The area of this trapezium is 90 cm^2 . Work out its height.



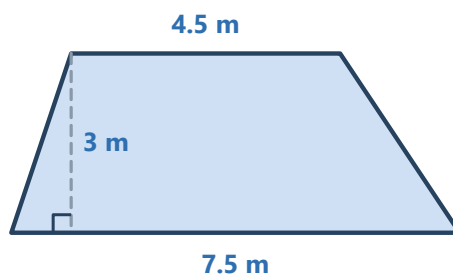
Answer: 10 cm

6 The area of this trapezium is 76 cm^2 . Work out the length of the side marked with a question mark.



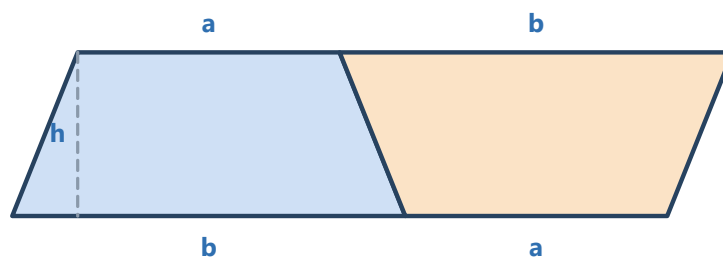
Answer: 14 cm

- 7 A patio is a trapezium. The parallel sides are 4.5 m and 7.5 m and they are 3 m apart. Paving costs £35 per square metre. Work out the cost of paving the patio.



Answer: £630

- 8 Two identical trapeziums fit together to make a parallelogram. Work out (a) the base of the parallelgram, (b) its area, (c) the area of one trapezium.



- (a) (a) base

Answer: 20 cm

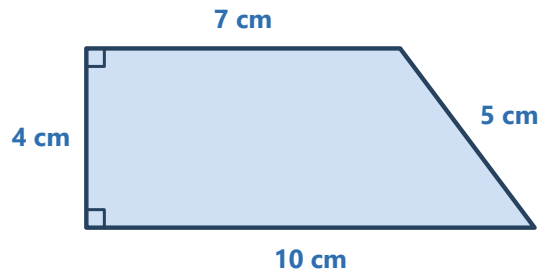
- (b) (b) area of parallelogram

Answer: 100 cm²

- (c) (c) area of one trapezium

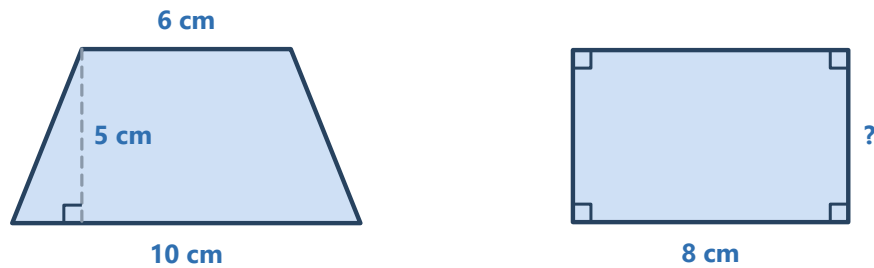
Answer: 50 cm²

- 9 Tom says: "The area of this trapezium is $\frac{1}{2} \times (7 + 10) \times 5 = 42.5 \text{ cm}^2$." Explain his mistake and work out the correct area.



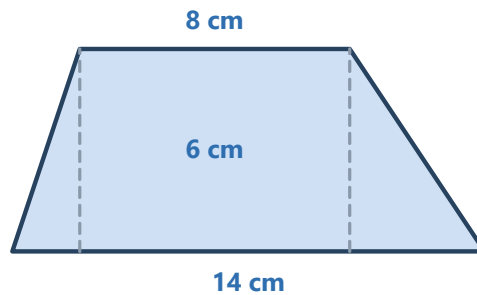
Answer: He used the slanting side (5 cm); area = 34 cm^2

- 10** A trapezium has parallel sides 6 cm and 10 cm and a height of 5 cm. A rectangle is 8 cm long and has the same area. Work out the width of the rectangle.



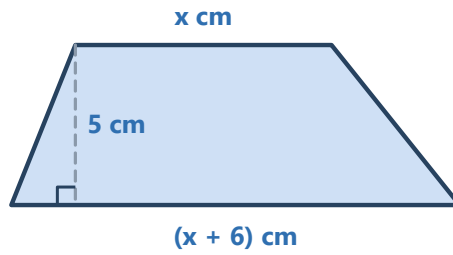
Answer: 5 cm

- 11** Chloe splits a trapezium into a rectangle and two triangles, as shown. Show that adding the three areas gives the same answer as $\frac{1}{2} \times (8 + 14) \times 6$.



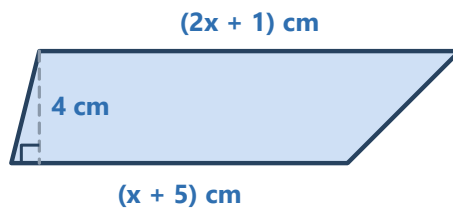
Answer: Both give 66 cm^2

- 12** The parallel sides of this trapezium are $x \text{ cm}$ and $(x + 6) \text{ cm}$. The height is 5 cm and the area is 55 cm^2 . Work out the value of x .



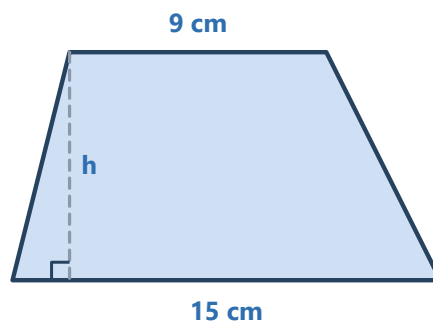
Answer: $x = 8$

- 13** The parallel sides of a trapezium are $(2x + 1)$ cm and $(x + 5)$ cm. Its height is 4 cm and its area is 54 cm^2 . Work out the value of x and the lengths of the parallel sides.



Answer: $x = 7$; sides 15 cm and 12 cm

- 14** A trapezium has parallel sides of 9 cm and 15 cm and an area of 96 cm^2 . A parallelogram has the same height and the same area as the trapezium. Work out the base of the parallelogram. What do you notice about your answer?



Answer: Height 8 cm; base 12 cm (the average of 9 and 15)