

The Panda Math Tutor

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2D Perimeter and Area

Student Worksheet
Questions & Working Space
IGCSE Mathematics

Name: _____

Date: _____

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Teach → Practice → Reason → Apply → Challenge → Master

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Note

How to use this worksheet. These questions are built *strictly* on the *2D Perimeter and Area* notes: units and conversions, rectangles and squares, triangles, parallelograms and trapeziums, circles, sectors and arcs, composite shapes, shaded regions, and real-world applications.

Working space. Ruled lines are provided after each question — show *all* of your working there, name the formula you are using, and give your answer with the correct units. Harder questions have a teal **Hint** box; try the question first and use the hint only if you are stuck.

Accuracy. Keep π exact all the way through and round only at the very end. Where a question says “in terms of π ”, leave the π in your answer; where it asks for a number of decimal places or significant figures, round only the final line.

Checking your answers. Full step-by-step solutions, a marking scheme for the exam paper, and a quick answer key are in the separate booklet “*2D Perimeter and Area — Solutions & Answer Key.*” Try each question honestly before you look.

Method**Formulas you will need**

Shape	Perimeter	Area
Rectangle	$2(\ell + w)$	ℓw
Square (side s)	$4s$	s^2
Triangle	$a + b + c$	$\frac{1}{2}bh$
Parallelogram	$2(a + b)$	bh
Trapezium	$a + b + c + d$	$\frac{1}{2}(a + b)h$
Circle	$2\pi r = \pi d$	πr^2
Semicircle	$\pi r + 2r$	$\frac{1}{2}\pi r^2$
Sector (angle θ)	$\frac{\theta}{360} \times 2\pi r + 2r$	$\frac{\theta}{360} \times \pi r^2$

In every area formula, h is the *perpendicular* height — never a slant side.

1 Part I — Topic-by-Topic Exercises

1.1 Units and Conversions

Exercise U1 [Basic]

Convert: (a) 6 cm^2 into mm^2 (b) 4 m^2 into cm^2

Exercise U2 *[Basic]*

Convert: (a) $25\,000\text{ cm}^2$ into m^2 (b) 3.2 km^2 into m^2

Exercise U3 *[Standard]*

A rectangular sheet of card measures 0.6 m by 45 cm . Find its area in cm^2 , and then express that area in m^2 .

Exercise U4 *[Intermediate]*

A student writes “ $1\text{ m}^2 = 100\text{ cm}^2$, because $1\text{ m} = 100\text{ cm}$ ”. Explain exactly what is wrong with this reasoning and state the correct conversion.

Hint

Area is a two-dimensional measurement, so think about what happens to the conversion factor when it is used twice.

Preview ends here

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