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2D Perimeter and Area

Student Worksheet

Questions & Working Space

IGCSE Mathematics

Name: _____

Date: _____

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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.

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1 Part I — Topic-by-Topic Exercises

1.1 Units and Conversions

Exercise U1 *[Basic]*

Convert: (a) $6\,\text{cm}^2$ into mm^2 (b) $4\,\text{m}^2$ into cm^2

Exercise U2 *[Basic]*

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

Exercise U3 *[Standard]*

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

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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

29 more pages are in the full pack.

2D Perimeter and Area — Worksheet — €11.99

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