

Cambridge IGCSE Maths 0580 Mensuration and Trigonometry Practice Exam

Cambridge IGCSE Mathematics (0580), Core and Extended · 23 questions · 49 marks

Name _____

Date _____

Score / 49

- Answer every question. Show your working: most marks are for method.
- Section A no calculator; Section B calculator allowed.
- Topics: Units of measure; Area and perimeter; Circles, arcs and sectors; Surface area and volume; Compound shapes and parts of shapes; Pythagoras' theorem; Right-angled triangles; Exact trigonometric values.
- The mark scheme is a separate free PDF: igcsemathrevision.com/igcse-frontend/downloads/practice-exams/0580/cambridge-igcse-maths-0580-mensuration-and-trigonometry-practice-exam-mark-scheme.pdf

Section A: no calculator

1. Convert [2]
(a) 3.5 km to metres (b) 750 g to kilograms.
|
2. A rectangle is 7 cm long and 4.5 cm wide. Find [2]
(a) its perimeter (b) its area.
|
3. A circle has radius 5 cm. Find, in terms of π , [2]
(a) its circumference (b) its area.
|
4. A cuboid measures 6 cm by 2 cm by 5 cm. Find [2]
(a) its volume (b) its total surface area.
|
5. An L-shape is made by cutting a 4 cm by 3 cm rectangle from one corner of a 10 cm by 8 cm [2]
rectangle. Find the area of the L-shape.
|
6. The two shorter sides of a right-angled triangle are 6 cm and 8 cm. Find the length of the hypotenuse. [2]



7. In a right-angled triangle, angle A is opposite a side of 3 cm. The other two sides are 4 cm (next to A) and 5 cm (the hypotenuse). Write down, as fractions, $\sin A$, $\cos A$ and $\tan A$. [2]
8. Without using a calculator, write down the exact value of
(a) $\sin 30^\circ$ (b) $\cos 60^\circ$ (c) $\tan 45^\circ$. [2]
9. Convert $60\,000\text{ cm}^3$ to m^3 . [2]
10. A trapezium has parallel sides of 6 cm and 10 cm. The perpendicular distance between them is 5 cm. Find its area. [2]
11. A sector has radius 12 cm and angle 60° . Find its arc length in terms of π . [2]
12. A cone has radius 3 cm and height 8 cm. The volume of a cone is $\frac{1}{3}\pi r^2 h$. Find its volume in terms of π [2]
13. A cube of edge 4 cm is placed on top of a cuboid measuring 6 cm by 6 cm by 2 cm. Find the total volume of the solid. [2]
14. A triangle has sides 9 cm, 12 cm and 15 cm. Show that it is a right-angled triangle. [2]
15. Without using a calculator, find the exact value of $\sin 30^\circ + \cos 60^\circ$. [2]



16. A straight ramp rises 5 m over a horizontal distance of 12 m. [3]
(a) Find the length of the ramp.
(b) Write down the tangent of the angle the ramp makes with the horizontal, as a fraction.
17. Without using a calculator, solve these equations for $0^\circ \leq x \leq 90^\circ$. [2]
(a) $\sin x = \frac{\sqrt{3}}{2}$ (b) $\tan x = \frac{1}{\sqrt{3}}$

Section B: calculator allowed

18. The circumference of a circle is 50 cm. Find its radius. Give your answer correct to 3 significant figures. [2]
19. A pyramid has a square base of side 6 cm and a perpendicular height of 10 cm. The volume of a pyramid is $\frac{1}{3} \times \text{base area} \times \text{height}$. Find its volume. [2]
20. A ladder 6 m long leans against a vertical wall. Its foot is 1.8 m from the wall. How high up the wall does the ladder reach? Give your answer correct to 3 significant figures. [2]
21. In a right-angled triangle, the sides next to the right angle are 5.2 cm and 8.1 cm. Find the angle opposite the 5.2 cm side. Give your answer correct to 1 decimal place. [2]
22. A rectangle has an area of 52.5 cm^2 and a length of 7.5 cm. Find its perimeter. [3]



- 23.** A solid is made from a cylinder of radius 3 cm and height 10 cm with a cone of radius 3 cm and height 4 cm on top. The volume of a cone is $\frac{1}{3}\pi r^2 h$. Find the total volume. Give your answer correct to 3 significant figures. [3]

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