Cambridge IGCSE[™]

CANDIDATE NAME					
CENTRE NUMBER			CANDIDATE NUMBER		

*516166139

CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/22

Paper 2 (Extended)

October/November 2022

45 minutes

You must answer on the question paper.

You will need: Geometrical instruments

INSTRUCTIONS

- Answer all questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do not use an erasable pen or correction fluid.
- Do not write on any bar codes.
- Calculators must not be used in this paper.
- You may use tracing paper.
- You must show all necessary working clearly and you will be given marks for correct methods even if your answer is incorrect.
- All answers should be given in their simplest form.

INFORMATION

- The total mark for this paper is 40.
- The number of marks for each question or part question is shown in brackets [].

This document has 8 pages. Any blank pages are indicated.

Formula List

For the equation

$$ax^2 + bx + c = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Curved surface area, A, of cylinder of radius r, height h.

$$A = 2\pi rh$$

Curved surface area, A, of cone of radius r, sloping edge l.

$$A = \pi r l$$

Curved surface area, A, of sphere of radius r.

$$A = 4\pi r^2$$

Volume, V, of pyramid, base area A, height h.

$$V = \frac{1}{3}Ah$$

Volume, V, of cylinder of radius r, height h.

$$V = \pi r^2 h$$

Volume, V, of cone of radius r, height h.

$$V = \frac{1}{3}\pi r^2 h$$

Volume, V, of sphere of radius r.

$$V = \frac{4}{3}\pi r^3$$

$$c$$
 b
 a

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$Area = \frac{1}{2}bc \sin A$$

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Answer **all** the questions.

1 These are the scores of 10 students in a test.

7 15 9 4 16 6 8 11 12 10

Find

(a) the median,

.....[2]

(b) the mean.

.....[2]

2 A regular polygon has 24 sides.

Find the size of each interior angle of the polygon.

.....[3]

 $P = 2a + b^2 - 3c$

Find P when a = 5, b = -4 and c = -3.

 $P = \dots [2]$

4	You	are given th	nat $\sqrt{7} = 2.65$ a	and $\sqrt{70}$	= 8.37,	each cor	rect to 2	decimal p	places.	
	Use this information to find the value of									
	(a)	$\sqrt{700}$,								
										[1]
							•••••	•		[-]
	(b)	$\sqrt{280}$.								
										[1]
5	A b	iased 5-sided results are s	d spinner is spun 2 shown in the table	200 times.						
			Number	1	2	3	4	5		
			Frequency	24	48	63	38	27	_	
			1 .: 0	0.1				I	J	
	(a)	Find the re	lative frequency of	of the spinr	ner landin	g on 2.				
										[1]
	(b)	The spinne	r is spun 1000 tim	nes						
	(2)				the enin	nor londa	on 2			
		ring the ex	pected number of	tillies tilai	t tile spilli	nei ianus	OII Z.			
							•••••	• • • • • • • • • • • • • • • • • • • •		[1]
	G 1	2	7 10							
6	Sor	ve $2x + 6 >$	$\rightarrow 5x - 10$.							
							•••••	•••••		[2]

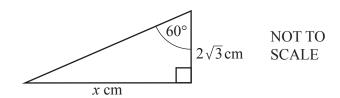
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7	Describe fully the inverse of each transformation. (a) Translation by $\binom{-2}{5}$.	
	(b) Enlargement with centre (2, 3) and scale factor 2.	[2]
0		[2]
8	Find the value of $125^{-\frac{1}{3}}$.	
		[1]
9	y is inversely proportional to x^3 . When $x = 5$, $y = 2$. Find y when $x = 10$.	

$$y =$$
 [3]

6

10



Find the value of x.

$$x = \dots [3]$$

11 Simplify.

$$\frac{ax^2 + 5ax + bx + 5b}{x^2 - 25}$$

12 f(x) = 11x + 2 $g(x) = \sin x^{\circ}$

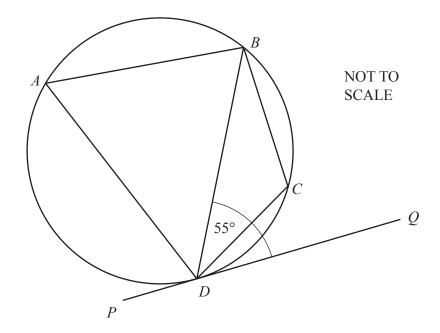
(a) Find $f^{-1}(x)$.

$$f^{-1}(x) =$$
 [2]

(b) Find g(f(8)).



13



A, B, C and D are points on the circle. PQ is a tangent to the circle at D. Angle $BDQ = 55^{\circ}$.

Complete these statements giving a reason for each answer.

(a)	Angle $BAD = \dots$ because	
		[2
(b)	Angle $BCD =$ because	
		[2]

 $4\log y + 3\log x = 2$

Find y in terms of x.

.....[3]

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