

# **Cambridge IGCSE**<sup>™</sup>

CANDIDATE NAME					
CENTRE NUMBER			CANDIDATE NUMBER		

# 6765421013

### **CAMBRIDGE INTERNATIONAL MATHEMATICS**

0607/21

Paper 2 (Extended) May/June 2021

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.

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[Turn over

### 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.

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

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

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

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

## Answer all the questions.

1	Wor	k out.		
	(a)	3 - 0.018		
	(b)	$0.04^2$		[1]
	(c)	$\frac{0.08}{0.2}$		[1]
				[1]
2	(a)	Write 5249.6 correct to two significant figures.		[1]
	(b)	Write 0.0030626 correct to three decimal places.		
				[1]
3	A ca	ar travels 300 metres in 20 seconds.		
	Find	I the average speed of the car in		
	(a)	metres per second,		
	(b)	kilometres per hour.	m/s	[1]
			km/h	[2]

4	Sol	lve.

(a) 
$$2-4(5-2x)=0$$

$$x =$$
 [2]

**(b)** 
$$|2x-5|=9$$

$$x = \dots$$
 or  $x = \dots$  [2]

5 Find the value of

(a)	64 <sup>0</sup> ,	,

**(b)** 
$$64^{\frac{1}{3}}$$
.

**6** A regular polygon has 30 sides.

Find the size of one exterior angle.

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7	Lootorico	
,	Factorise	

(a) 
$$12ax - 2by + 3ay - 8bx$$

**(b)** 
$$5x^2 - 6x - 8$$

**8** (a) Work out 
$$\begin{pmatrix} 12 \\ -5 \end{pmatrix} - 5 \begin{pmatrix} 4 \\ -1 \end{pmatrix}$$
.

$$\left(\begin{array}{c} \\ \end{array}\right) \quad [2]$$

**(b)** Work out the magnitude of  $\begin{pmatrix} 3 \\ -4 \end{pmatrix}$ .

_	_							
9	Rearrange	this	equation	to	make x	the	subject	t.

$$\frac{a}{2x-3} = \frac{b}{5x}$$

$$x =$$
 [3]

**10** (a) Solve.

$$\sin x = \frac{1}{2}$$
 for  $0^{\circ} \le x \le 90^{\circ}$ 

$$x =$$
 [1]

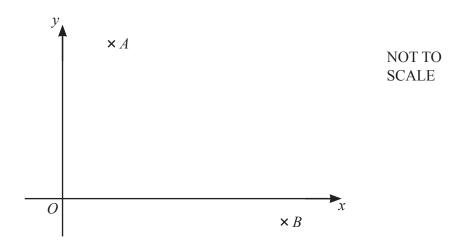
**(b)** Solve.

$$\sin x = -\frac{1}{2}$$
 for  $0^{\circ} \le x \le 360^{\circ}$ 

$$x =$$
 ......[2]

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The points A(2, 8) and B(6, -2) are shown on the diagram.

Find the equation of the perpendicular bisector of the line AB. Give your answer in the form y = mx + c.

$$y =$$
 [5]

### Question 12 is printed on the next page.

12	A bag contains 12 discs. 7 discs are red and 5 discs are green. A disc is picked at random and not replaced. A second disc is then picked at random.									
	Find the probability that									
	(a) b	ooth discs are green,								
				[2						
	<b>(b)</b> at	at least one disc is green.								

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