

Cambridge International Examinations

Cambridge International General Certificate of Secondary Education

CANDIDATE NAME		
CENTRE NUMBER	CANDIDATE NUMBER	

168293557

CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/22

Paper 2 (Extended)

October/November 2016

45 minutes

Candidates answer on the Question Paper.

Additional Materials: Geometrical Instruments

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

Do not use staples, paper clips, glue or correction fluid.

You may use an HB pencil for any diagrams or graphs.

DO **NOT** WRITE IN ANY BARCODES.

Answer all the questions.

CALCULATORS MUST NOT BE USED IN THIS PAPER.

All answers should be given in their simplest form.

You must show all the relevant working to gain full marks and you will be given marks for correct methods even if your answer is incorrect.

The number of marks is given in brackets [] at the end of each question or part question.

The total number of marks for this paper is 40.



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
 c
 a
 c
 a
 c
 a
 c
 a
 c
 a

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

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

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

Answer all the questions.

1		25	26	27	28	29	30	
	From this list	, write down a prii	ne number.					
								 [1]
2	\$84 is divide	d in the ratio 3 : 4.						
	Find the valu	e of the largest sha	re.					
							\$	 [2]
3	In a gala tha	price of all furnitu	ra is raduae	d by 200	/			
3					'0.			
		the sale the price o						
	Find the	e price of this chair	in the sale					
							\$	 [2]
	(b) In the sa	ale, the price of a ta	able is \$140).				
	Find the	e price of this table	before the	sale.				

\$.....[3]

(6.4 × 10 ⁻²) - (1.6 ×				
i) (0.4×10) – (1.6)	<10 ⁻³)			
			•••••	
$(6.4 \times 10^{-2}) \div (1.6 \times 10^{-2})$	(10^{-3})			
One day there were 720 s the table shows the type		lents used to get to	o school.	
	1	\mathcal{E}		
	Walk	Bus	Car	Bicycle
Type of transport		Bus 280	Car 240	Bicycle
		Bus 280	Car 240	Bicycle x
Type of transport Number of studer				
Type of transport Number of studer				
Type of transport Number of studer			240	x
Type of transport Number of studer			240	
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Type of transport Number of studer a) Find the value of x. b) Find the relative free	nts 117	280	$x = \dots$	x

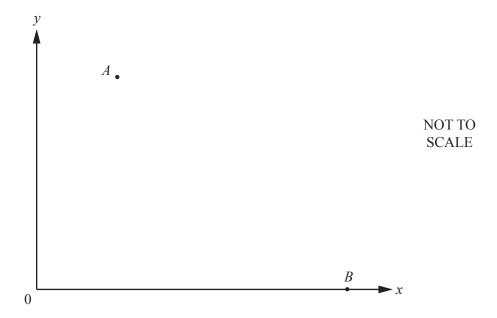
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6	A bag contains 10 discs. 5 discs are red, 4 are blue and 1 is green. A disc is chosen at random and not replaced. A second disc is then chosen at random.	
	Find the probability that	
	(a) both discs are green,	
	(b) both discs are the same colour.	[1]
		[3]
7	Expand the brackets and simplify.	
	(a) $3x(4-5x)-5x(3x+2)$ (b) $(4x-y)(3x+2y)$	[2]
		[3]

.....[2]

8	Find the value of $64^{\frac{1}{3}}$.	
9	Find the highest common factor (HCF) of $8x^3y^4$ and $12x^4y$.	[1]
10	In each of the following, rationalise the denominator and simplify you (a) $\frac{6}{\sqrt{3}}$	[2] r answer.
	$(b) \frac{\sqrt{3}}{2+\sqrt{3}}$	[2]

11 The points A(3, 8) and B(9, 0) are shown on the diagram below.



Find the equation of the perpendicular bisector of the line AB.

.....[5]

Question 12 is printed on the next page.

Wh		
(a)	Find an equation connecting y and x .	

.....[2]

(b) Find the values of x when y = 32.

12 y is proportional to the square of x.

.....[2]

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