REGISTRATION CENTRE NUMBER	CENTRE NAME
CANDIDATE'S FULL NAMES	
CANDIDATE IDENTIFICATION NUMBER	SUBJECT CODE **0570** / PAPER NUMBER **2**
[redacted]	
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CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD
ORDINARY LEVEL EXAMINATION

SUBJECT TITLE	SUBJECT CODE / PAPER NUMBER
MATHEMATICS	**0570** / **2**
	EXAMINATION DATE: **JUNE 2019**

Two and a Half hours

Enter the information required in the boxes above.
This paper is arranged in two sections, **A and B. Answer ALL questions in Sections A and B.**

Section A: Answer ALL the questions in the spaces provided. The mark allocation for each question is indicated.

Section B: All questions in Section B carry equal marks.

You are reminded of the necessity for good English and orderly presentation in your answers.
In calculations, you are advised to show all the steps in your working, giving your answer at each stage.

Calculators are allowed.

Turn Over

FOR EXAMINERS' USE ONLY	
Marked by: ---------- *Signature:*---------- *Date* ----------	*SCORE*
Checked by: ---------- *Signature:*---------- *Date* ----------	

SECTION A

ANSWER ALL 15 QUESTIONS IN THIS SECTION

1. Evaluate $15 - 12 \div 4 \times 16 + 2$

.....

.....

(4 marks

2. A household consumed 300 units of electricity where the first 220 units are billed at 50 FCFA per unit and the rest at 79 FCFA per unit,

(a) Find the number of units to be paid at 79 FCFA

.....

.....

(b) Calculate the total amount paid by this household in FCFA

.....

.....

(6 marks

3. Two cows and two goats cost 560,000 FCFA and one cow and three goats cost 400,000 FCFA.

(a) Write two equations in two variables to represent the above statement.

.....

.....

(b) Find the cost of each.

.....

.....

.....

(c) Find the total cost of a goat and a cow.

.....

.....

.....

(7 marks)

4. Find, to 1 decimal place, the length of an arc PQ which subtends an angle of 60° at the centre of a circle with radius 5.6 cm, taking $\pi = \frac{22}{7}$.

.....

.....

.....

(4 marks)

5.

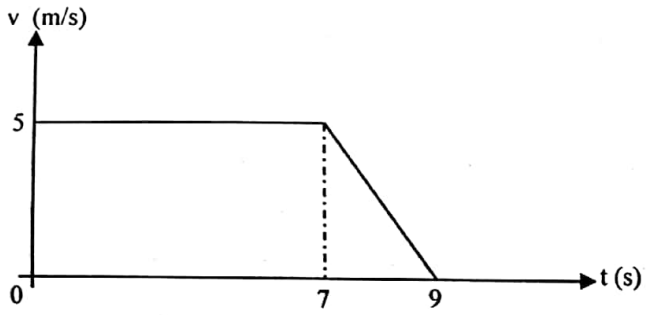

Figure 1

Figure1 is a (v-t) graph where the distance covered by a moving object is the area under the graph. Calculate the distance covered in 9s.

.....

.....

.....

.....

.....

(5 marks)

6. A ship leaves port A on a bearing of 030^0. After sailing for 50km to Port B, it changes direction on a bearing of 120^0 and continues in the direction for 40 km to Port C.
Find

(a) The distance of C from A, to 2 decimal places.

.....

.....

.....

.....

.....

(b) The bearing of B from C

.....

.....

.....

(6 marks)

7. Given that $x^2 - 5x + 4 \leq 0$

(a) Find the range of values of x which satisfy the inequality.

.....

.....

.....

(b) Represent the solution on a number line.

.....

.....

(6 mark

8. The interior angle of a regular polygon is 108^0

Find

(a) the value of an exterior angle of this regular polygon

.....

.....

.....

(b) the number of sides of this polygon.

.....

.....

.....

(c) Write the special name of this regular polygon.

.....

(5 mark

9.

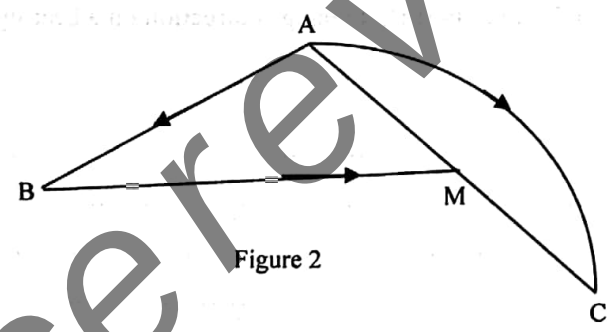

Figure 2

Figure 2 shows a road network for towns A, B, C, and M

Determine

(a) The number of nodes at M

.....

.....

(b) the number of links between

A and B

.....

A and C

.....

(c) Find the number of arcs involved in the network.

.....

(5 marks)

10. Given that P = $\begin{pmatrix} 2 & 3 \\ 1 & 4 \end{pmatrix}$, M = $\begin{pmatrix} a & b \\ -1 & 2 \end{pmatrix}$, N = $\begin{pmatrix} -1 & 10 \\ -3 & 10 \end{pmatrix}$ and PM = N

Find

(a) PM in terms of a and b

.....

.....

.....

(b) the values of a and b

.....

.....

.....

.....

(6 marks)

11. Two statements are such that

P: peter is studying English Language

q: Peter will live in Britain

(a) Translate $p \rightarrow q$ in ordinary English.

.....

Write the notation and translate in ordinary English the

(b) 'The converse of $p \rightarrow q$

.....

(c) The inverse of $p \rightarrow q$

.....

(6 marks)

12. The sum, S_n of the first n terms of a sequence of real numbers is given by $S_n = n(n+5)$

Find

(a) The first term

.....

.....

.....

(b) The 9th term

.....

.....

(c) The sum of the first 10 terms.

.....

.....

(6 marks)

13. Given that $\tan\theta = \sqrt{3}$ and θ is an acute angle

Find

(a) $\sin\theta$

.....

.....

.....

(b) the value in degrees of θ

.....

.....

(6 marks)

14.

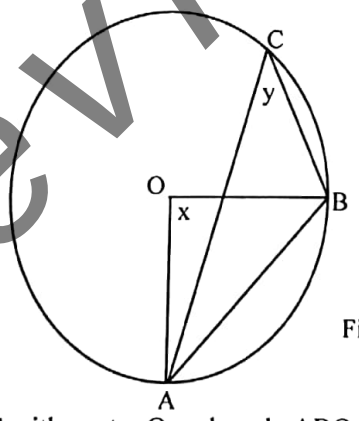

Figure 3

Figure3 is a circumcircle ABC with centre O and angle ABO = 50^0

Calculate the angles marked x and y

.....

.....

.....

.....

(6 marks)

15. The probability that it will rain on a particular day is $\frac{3}{5}$

Find the probability that it

(a) will not rain on that day

.....

.....

(b) may rain for two consecutive days

.....

.....

(6 marks)

SECTION B

ANSWER ALL FOUR QUESTIONS IN THIS SECTION. EACH QUESTION CARRIES 15 MARKS

1. (i) Given two functions, $f(x) = x^2 - 4$ and $g(x) = x - 2$, On the same axes and using a scale of 2cm to 1unit on both axes,
Draw the graphs of $f(x)$ and $g(x)$ for $-3 \leq x \leq +3$
From your graph, determine the values of x at the point(s) of intersection.
Write out a quadratic equation whose roots are these values

(ii) A cylindrical tank of radius 3.5 m and height 10 m is to be filled with water. Using $\pi = \frac{22}{7}$

(a) Determine the volume of water when the tank is full.

A tap is attached to the tank such that when opened for 3 minutes, $\frac{1}{5}$ of the water flows from the tank.

(b) Calculate the quantity of water that flows out, in 3 minutes.

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2. (i) The functions f and g are defined as $f: x \mapsto 3x+1, x \in \mathbb{R}$ and $g: x \mapsto \frac{1}{f(x)}$

(a) Find f(2)
(b) State the domain of f(x)
(c) Evaluate g(1)
(d) Find $f^{-1}(x)$
(e) Find gf(x) and state its domain

(ii) Using a ruler and a pair of compasses only

(a) Construct triangle PQR in which PQ = 5cm, QR = 4cm and angle PQR = 60^0

(b) Bisect any two sides of triangle PQR.

(c) Construct a circle with centre O, such that the circle passes through the vertices P,Q and R

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3. (i) The table below shows the number of pears picked by some children.

No of pears	1	2	3	4	5
No of children	3	8	4	x	2

(a) Determine the total number of children in terms of x
Given that the mean is 3,

(b) Find the value of x

(c) State the modal number of pears

(d) Determine the total number of children involved

(ii)

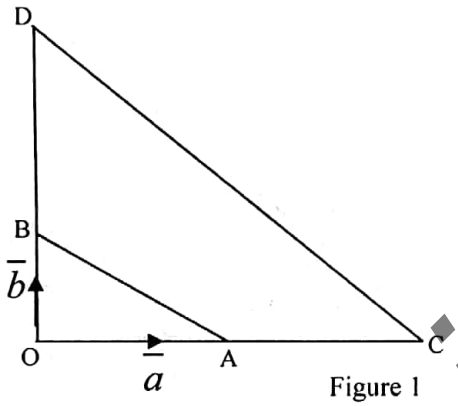

Figure 1

In figure1, **OA**=$\overline{a}$, **OB** =$\overline{b}$ and **OD=4OB**
Find in terms of $\overline{a}$ and $\overline{b}$
(a) **AB**

Given that OA:AC=1:3, find the vectors
(b) **OC**
(c) **CD**
(d) State the relationship between the vectors **AB** and **CD**

4. (i) Bih, Epie and Ngono invested some money in a business and made a total profit of 468000 FCFA. They shared 10% of the profit equally.

Find

(a) The amount shared

(b) The amount each person received

(c) The remainder of the profit

The remainder was shared among Bih,k Epie and Ngono in the ratio 3:5:7 respectively,

Calculate

(d) Bih's share of the remainder

(e) The total amount received by Bih

(ii) In a certain class of a school, the sets M, P and C are defined as:

M = {x: x is a student who studies Mathematics}

P = {x: x is a student who studies physics}

C = {x: x is a student who studies Chemistry}.

Express the following in ordinary English

(a $P \subset M$

(b) $n(M \cap P \cap C) = 25$

Express the following statements in set notation

(c) 15 students study mathematics and physics but not chemistry

(d) 7 students study Chemistry only.

Given that n(C) = 37 and n(M) = 53,

(e) Draw a Venn diagram to represent the information above.