

NORTH REGION
REGIONAL DELEGATION OF SECONDARY EDUCATION
REGIONAL INSPECTORATE OF PEDAGOGY IN CHARGE OF
SCIENCE EDUCATION
MATHEMATICS DEPARTMENT

ACADEMIC YEAR 2024-2025
REGIONAL MOCK EXAMINATION
LEVEL: ORDINARY LEVEL
SUBJECT: MATHEMATICS
SUBJECT CODE:0570 MATHEMATICS 1

Time Allowed: 1 Hour 30 Minutes

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. You will need a soft HB pencil and an eraser for this paper.

1. **Use a Soft HB pencil throughout the examination.**
2. **Do Not open this Booklet until you are told to do so**
Before the examination begins:
3. Check that this question booklet is headed "ORDINARY LEVEL " -0570 MATHEMATICS 1
4. Fill in the required information in the spaces above.
5. Fill in the required information in the spaces provided in the answer sheet your HB pencil:
Candidate Name, Exam Session, Subject code and Candidate Identification Number.
Take care that you do not crease or fold the answer sheet or make marks on it other than the ones asked for in these instructions.
How to answer the questions in this examination:
6. Answer **ALL** the **50** questions in this Examination. All questions carry equal marks.
7. Non-programmable calculators are allowed
8. Each question has FOUR suggested Answers: A, B, C and D. Decide which answer is appropriate. Find the number of the question on the answer sheet and draw horizontal lines across the letter to join the square brackets for the answer you have chosen.
For example, if B is your correct answer, mark B as shown below:

[A] [B] [C] [D]
9. Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, carefully erase the first mark, then mark your new answer.
10. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back later to attempt it.
11. Do all your rough work in this question booklet using the black spaces in between the questions.
12. **At the end of the examination, the invigilator shall collect the answer sheets first and then the question booklets. DO NOT ATTEMPT TO LEAVE THE EXAMINATION HALL WITH IT**

1. Evaluating the expression $24 \div \frac{2}{3} - 3 \times 1\frac{1}{3} + 4$, gives:

- A. 16
- B. 48
- C. 36
- D. 28

2. The value of the digit 6 in the number 21.076 is:

- A. 6 thousandth
- B. 6 hundred
- C. 6 thousands
- D. 6 unith

3. The HCF of 30 and 48 is

- A. 30
- B. 6
- C. 48
- D. 2

4. What is the LCM of 12 and 40?

- A. 120
- B. 100
- C. 80
- D. 4

5. Write the number 0.00045600 in standard form.

- A. 45.6×10^{-4}
- B. 456×10^{-6}
- C. 4.56×10^{-4}
- D. 4.56×10^4

6. The number number 304.0531 correct to four significant figures is

- A. 3040
- B. 304.05
- C. 304.0
- D. 304.1

7. An item which cost 3500 FCFA was later sold at 3000FCFA. what is the percentage loss, written to two decimal places?

- A. 14.29%
- B. 16.67%
- C. 14.28%
- D. 16.66%

8. Given that y varies directly as the square of x , and that $y = 3$ when $x = -2$, then the equation relating x and y is :

- A. $y = 3x^2$
- B. $y = \frac{3x^2}{4}$
- C. $y = \frac{-3x}{2}$
- D. $y = \frac{-3x^2}{4}$

9. Given that $v = \frac{\pi r^2 h}{c}$, express r in terms of v , c , h and π

- A. $r = \pm \sqrt{\frac{vc}{\pi h}}$
- B. $r = \sqrt{\frac{vc}{\pi h}}$
- C. $r = \frac{vc}{\pi h}$
- D. $r = \pm \sqrt{\frac{\pi h}{vc}}$

10. What is the solution to the following simultaneous equations:

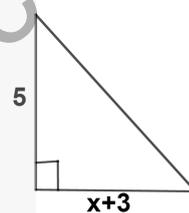
$$x - y = 3 \dots\dots\dots (1)$$

$$2x + y = 6 \dots\dots\dots (2)$$

- A. $x = 4, y = 1$
- B. $x = 2, y = 2$
- C. $x = 3, y = 0$
- D. $x = 0, y = 3$

11. Given that the area of the right-angle triangle below is 10cm^2 , what is the value of x ?

- A. 2cm
- B. 1cm
- C. 0.8cm
- D. -5cm



12. The following are consecutive terms of a sequence of numbers 3, 8, 13, p , 23, 28. what is the value of p

- A. 5
- B. 15
- C. 18
- D. 10

13. Given that the general term of a sequence is $T_n = 6n - 2$ for $n = 0, 1, 2, 3, \dots$, what is the 5^{th} term of this sequence?

- A. 22
- B. 28
- C. 34
- D. 24

14. The three consecutive terms of a geometric progression are 9, 6, 4 with respect to 9, and 4, we refer to 6 as

- A. arithmetic mean
- B. common ratio
- C. common difference
- D. geometric mean

15. The interval notation for $-3 < x \leq 7$ is

- A. $(-3, 7)$
- B. $(-3, 7]$
- C. $] -3, 7[$
- D. $[-3, 7]$

16. The range of values of x satisfying the inequality $(x - 2)(x + 3) > 0$, is:

- A. $\{x : -3 \leq x \leq 2\}$
- B. $\{x : -3 < x < 2\}$

C. $\{x : x < -3\} \cup \{x : x > 2\}$

D. $\{x : x \leq -3\} \cup \{x : x \geq 2\}$

17. Consider the algebraic division, $\frac{f(x)}{g(x)} = h(x) + R$, If $g(x)$ is a factor of $f(x)$, then what is the value of R ?

- A. 0
- B. 1
- C. 2
- D. 3

18. What is the value of k for which the polynomial $P(x) = 4x^3 - 10x^2 + kx + 5$, leaves a remainder of 2, when divided by $(x - 1)$

- A. -11
- B. 3
- C. 9
- D. -1

19. The value of x for which the exponential equation $32^{(x-1)} = 2^{2x}$, is;

- A. $x = \frac{1}{3}$
- B. $x = 3$
- C. $x = \frac{5}{3}$
- D. $x = \frac{3}{5}$

20. Expressing $x^y = z$ in logarithmic form gives:

- A. $\log_z^x = y$
- B. $\log_x^y = z$
- C. $\log_z^y = x$
- D. $y = \log_x^z$

21. Simplifying and rewriting $\log^p + \log^q = 3$ in exponential form produces:

- A. $Pq = 10^3$
- B. $P + q = 10^3$
- C. $\frac{p}{q} = 10^3$
- D. $p + q = 3$

22. A function $f: \mathbb{R}^+ \rightarrow \mathbb{R}^+$ defined as $f: x \mapsto 2x + 3$, then the inverse function, f^{-1} is defined as

- A. $f^{-1}: x \mapsto 2x - 3$
- B. $f^{-1}: x \mapsto \frac{x+3}{2}$
- C. $f^{-1}: x \mapsto \frac{x-3}{2}$
- D. $f^{-1}: x \mapsto \frac{2x-3}{2}$

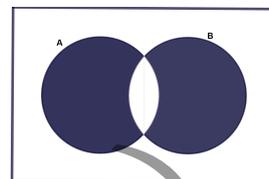
23. Which of the following best describes an **ordered relation**?

- A. It is reflexive and symmetric
- B. It is reflexive, transitive and symmetric
- C. It is reflexive, antisymmetric and transitive
- D. It is reflexive symmetric and antisymmetric

24. Given that $f(x) = 3x + 1$ and $g(x) = \frac{2}{x-2}$, $x \neq 2$, the value of $gf(5)$ is;

- A. 3
- B. -1
- C. $\frac{1}{7}$
- D. $\frac{2}{7}$

25. Which set notation best describes the shaded portion in the Venn diagram?



- A. $A^c \cup B^c$
- B. $(A \cup B)^c$
- C. $A \cup B$
- D. $A \cap B$

26. Given two sets A and B , such that $n(A) = 8$, $n(B) = 11$ and $n(A \cap B) = 3$, what is the value of $n(A \cup B)$?

- A. 21
- B. 19
- C. 16
- D. 14

27. What is the determinant of the matrix $\begin{pmatrix} 4 & 5 \\ 6 & 8 \end{pmatrix}$

- A. 62
- B. -2
- C. 1
- D. 2

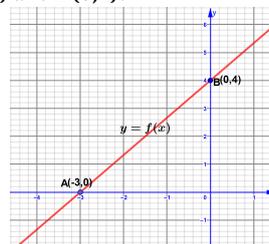
28. If the 2×2 matrix $A = \begin{pmatrix} -1 & 3 \\ 5 & -2 \end{pmatrix}$, then $(A^T)^T$ is

- A. $\begin{pmatrix} -1 & 3 \\ 5 & -2 \end{pmatrix}$
- B. $\begin{pmatrix} -1 & 5 \\ 3 & -2 \end{pmatrix}$
- C. $\begin{pmatrix} 5 & -2 \\ -1 & 3 \end{pmatrix}$
- D. $\begin{pmatrix} -2 & 3 \\ 5 & -1 \end{pmatrix}$

29. What is the value of y for which the matrix $\begin{pmatrix} 1 & 2 \\ y & 4 \end{pmatrix}$ has no inverse?

- A. $y = 0.5$
- B. $y = 2$
- C. $y = -2$
- D. $y = -0.5$

30. Consider the graph below. What is the equation of the line passing via the points $A(-3,0)$ and $B(0,4)$?



- A. $y = \frac{4}{3}x + 4$
- B. $4y - 3x = 12$
- C. $y = 4x + 12$
- D. $y = \frac{4}{3}x + 4$

31. Consider the line $L: y = 2x - 7$. which of the following lines is perpendicular to L ?

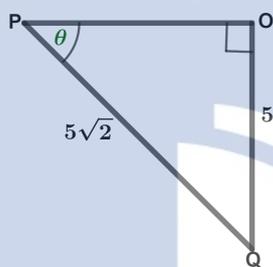
- A. $y = -2x + 7$
- B. $-y = 2x - 7$
- C. $y = -\frac{1}{2}x - 13$
- D. $y = \frac{1}{2}x - 7$

32. The length of the line segment joining the two points (2, 1) and (8, 9) is

- A. 10 units
- B. 100 units
- C. 14 units
- D. $10\sqrt{2}$ units

33. From the diagram below, given that $\triangle OPQ$ is a right angle triangle, with $\angle OPQ = \theta$, $PQ = 5\sqrt{2}$, $OQ = 5$ What is the value of $\sin \theta$?

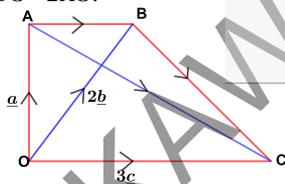
- A. $\frac{1}{2}$
- B. $\frac{\sqrt{2}}{2}$
- C. $\sqrt{2}$
- D. 1



34. The unit vector \hat{v} parallel to the vector $\vec{v} = -4\hat{i} + 3\hat{j}$ is;

- A. $\hat{v} = -20\hat{i} + 15\hat{j}$
- B. $\hat{v} = -\frac{4}{5}\hat{i} + 3\hat{j}$
- C. $\hat{v} = -\frac{5}{4}\hat{i} + \frac{5}{3}\hat{j}$
- D. $\hat{v} = -\frac{4}{5}\hat{i} + \frac{3}{5}\hat{j}$

35. In the figure below, $\overline{OA} = a$, $\overline{OB} = 2b$ and $\overline{OC} = 3c$. Find, $\overline{BC} - 2\overline{AC}$?



- A. $\underline{a} - 2\underline{b} + \underline{c}$
- B. $2\underline{a} - 2\underline{b} - 3\underline{c}$
- C. $2\underline{a} - 3\underline{c}$
- D. $-2\underline{b} - 3\underline{c}$

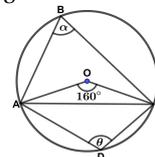
36. Each interior angle of a regular polygon measures 140° then how many sides has the polygon?

- A. 9
- B. 8
- C. 7
- D. 4

37. What is the sum of the interior angles of a regular polygon with 6 sides?

- A. 720°
- B. 360°
- C. 1080°
- D. 180°

38. In the figure below, O is the center of the circle, with $\angle AOC = 160^\circ$. What is the value of the angle $\angle ADC$ marked θ ?



- A. 30°
- B. 80°
- C. 100°
- D. 150°

39. Consider the statements;

p : Cameroon is a country in Africa

q : Cameroon is a continent

Then the symbolic representation of the statement

"If Cameroon is a country in Africa, then she is not a continent" is:

- A. $p \Rightarrow q$
- B. $\sim p \Rightarrow \sim q$
- C. $p \Rightarrow \sim q$
- D. $q \Rightarrow \sim p$

40. Let p and q be simple statements. Let r , be the compound statement formed from the combination of p and q . What statement best represents r from the truth table below?

- A. $p \Leftrightarrow q$
- B. $p \wedge q$
- C. $p \Rightarrow q$
- D. $p \vee q$

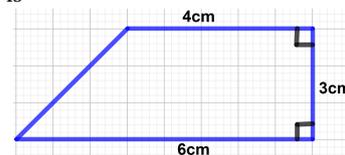
p	q	r
T	T	T
T	F	T
F	T	T
F	F	F

41. Given the transformation matrix M , where $M = \begin{pmatrix} 1 & 0 \\ 0 & 3 \end{pmatrix}$, then M describes,

- A. A stretch of 3 units parallel to the y -axis
- B. A stretch of 3 units parallel to the x -axis
- C. An enlargement of 3 units
- D. A shear of 3 units parallel to the y -axis

42. The area of the figure below in cm^2 is

- A. 12
- B. 15
- C. 13
- D. 72

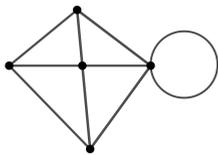


43. A water tank is in the form of a cuboid which measures $3m$ long by $2m$ wide by $4m$ high. What is the volume of water in the tank if it is half filled?

- A. $24m^2$
- B. $9m^2$
- C. $24m^3$
- D. $12m^3$

44. How many regions are there in the network below

- A. 6
- B. 5
- C. 7
- D. 9



45. A box contains 5 Blue pens, 3 Red pens and 2 Green pens. What is the probability of selecting 3 pens without replacement so that the first is Blue, the second is Red and the third is Green, in that order?

- A. $\frac{1}{24}$
- B. $\frac{13}{12}$
- C. $\frac{3}{100}$
- D. 1

46. Suppose the probability of a form 3 student passing in Ordinary Level Mathematics in the Cameroon GCE is $\frac{2}{5}$, what is her probability of failing in same mathematics paper?

- A. $\frac{1}{2}$
- B. $\frac{1}{5}$
- C. $\frac{3}{5}$
- D. $\frac{1}{3}$

47. M and N are independent events such that $P(M) = \frac{2}{3}$ and $P(N) = \frac{1}{4}$, then the $P(M \cap N) =$

- A. 0
- B. 1
- C. $\frac{1}{6}$

D. $\frac{11}{12}$

48. In a certain physics exams, the marks on 20 of some 15 students were recorded as follows: 10, 3, 2, 1, 19, 10, 13, 12, 14, 13, 19, 10, 5, 14, and 16. What is the median of the marks distribution?

- A. 10
- B. 12
- C. 13
- D. 19

49. Consider the frequency distribution table below for scores x and corresponding frequency f. What is the mean of the distribution?

score(x)	frequency(f)
2	4
3	2
4	0
7	1

- A. 21
- B. 3
- C. 4
- D. 7

50. Given that $\sin \theta = \frac{3}{5}$ and $\cos \theta = \frac{4}{5}$, then

- A. $\tan \theta = 1$
- B. $\tan \theta = \frac{12}{25}$
- C. $\tan \theta = \frac{7}{5}$
- D. $\tan \theta = \frac{3}{4}$

STOP!!!

⚠️ GO BACK AND CHECK YOUR WORK ⚠️