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REPUBLIC OF CAMEROON
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ANNEE SCOLAIRE 2026/2027

MATHEMATICS – LOWER SIXTH

FIRST SEQUENCE

Name:	Date:	Time:

SECTION A: MULTIPLE CHOICE QUESTIONS (15 marks)

Choose the correct answer from A, B, C or D. Write only the letter of the correct answer.

1. The range of the data 4, 7, 9, 12, 15, 18 is:

A. 11
B. 12
C. 14
D. 15

2. If $Q_1 = 18$ and $Q_3 = 42$, the interquartile range is:

A. 20
B. 24
C. 30
D. 60

3. The mean of 5, 7, 8, 10 and 15 is:

A. 8
B. 9
C. 10
D. 11

4. The median of 3, 7, 9, 12, 15, 18 and 20 is:

A. 9
B. 12
C. 15
D. 18

5. The mode of 4, 6, 7, 6, 9, 6, 8, 7 is:

A. 4
B. 6
C. 7
D. 9

6. In a frequency table, the frequencies are 4, 7, 5 and 9. The total frequency is:

A. 21
B. 24
C. 25
D. 26

7. For x = 2, 4, 6 and frequencies 3, 5, 2 respectively, the value of Σfx is:

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A. 30
B. 32
C. 34
D. 36

8. Which of the following is a grouped frequency distribution?

A. 2, 5, 7, 9, 12
B. 0–9, 10–19, 20–29
C. 4, 4, 5, 6, 7
D. 11, 13, 15, 17

9. A cumulative frequency curve is also commonly called a:

A. Histogram
B. Frequency polygon
C. Ogive
D. Bar chart

10. If the mean of a data set is 5 and the variance is 9, its standard deviation is:

A. 3
B. 4
C. 9
D. 81

11. Solve $x^2 - 5x + 6 = 0$ by factorisation.

A. $x = 1$ or 6
B. $x = 2$ or 3
C. $x = -2$ or -3
D. $x = -1$ or -6

12. The roots of $2x^2 - 7x + 3 = 0$ are:

A. 1 and 3
B. 1/2 and 3
C. $-1/2$ and -3
D. 2 and 3/2

13. For $ax^2 + bx + c = 0$, the sum of the roots is:

A. b/a
B. $-b/a$
C. c/a
D. $-c/a$

14. If the roots of $x^2 - 8x + 15 = 0$ are α and β, then $\alpha + \beta$ and $\alpha\beta$ are:

A. 8 and 15
B. -8 and 15
C. 8 and -15
D. -8 and -15

15. Which method can be used to solve a quadratic equation?

A. Factorisation
B. Completing the square
C. Quadratic formula
D. All of the above

SECTION B: STRUCTURED / APC QUESTIONS (40 marks)

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Answer all four questions. Show all your working clearly and justify your answers where necessary.

Question 1 – Statistics and Measures of Dispersion (10 marks)

The marks obtained by 10 learners in a mathematics test are:
8, 12, 15, 10, 18, 12, 20, 15, 10, 20.

a) Arrange the data in ascending order.
b) Calculate the mean, median and mode.
c) Calculate the range.
d) Determine Q_1 and Q_3 and hence calculate the interquartile range.
e) Calculate the variance and standard deviation of the data.
f) State what the standard deviation tells you about the spread of the marks.

Question 2 – Frequency Table and Cumulative Frequency Curve (10 marks)

The ages of 40 participants in a school activity are grouped as follows:

Age (years):	10–14	15–19	20–24	25–29	30–34	35–39
Frequency:	4	7	10	9	6	4

a) State the total frequency.
b) Construct the cumulative frequency table.
c) State the upper class boundaries to be used for drawing a cumulative frequency curve.
d) Draw a less-than cumulative frequency curve (ogive).
e) Use the curve to estimate the median age.
f) Explain why a cumulative frequency curve is useful when finding the median and quartiles of grouped data.

Question 3 – Quadratic Equations and Expressions (10 marks)

A rectangular garden has a length that is 3 m greater than its width. Its area is 40 m².

a) Let the width be x metres. Form a quadratic equation for the area.
b) Solve the quadratic equation by factorisation.
c) State the dimensions of the garden, rejecting any value that is not physically meaningful.
d) Solve $2x^2 - 5x - 3 = 0$ using the quadratic formula.
e) Solve $x^2 + 6x + 5 = 0$ by completing the square.
f) State the different methods that can be used to solve a quadratic equation.

Question 4 – Relationships Between Roots and Coefficients (10 marks)

Consider the quadratic equation $2x^2 - 7x + 3 = 0$, whose roots are α and β.

a) Without solving the equation, find $\alpha + \beta$ and $\alpha\beta$.
b) Find $\alpha^2 + \beta^2$.
c) Find $1/\alpha + 1/\beta$.
d) Form a quadratic equation whose roots are 2α and 2β.
e) If the roots of $x^2 - px + 12 = 0$ differ by 2, determine the possible values of p.
f) Explain how the coefficients of a quadratic equation are related to the sum and product of its roots.

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