SIGNAL Publishers
Igniting thinking

GRADE 9 - 2025

THE SCHOLAR
004

SIGNAL CBE ASSESSMENT

FORTH TRIAL

JUNIOR SCHOOL ASSESSMENT
— MATHEMATICS —

TIME: 1 hr 30 min

Learner's Name:

.....

Grade:

.....

School Name:

.....

.....

Assessment No:

.....

Instructions for Learners:

1. Write down your name, name of your school and assessment number in the spaces provided.
2. This paper consists of 27 questions.
3. Ensure you check the question paper to ascertain that all the pages are printed and that no questions are missing.
4. Answer all the questions in the spaces provided.
5. Be sure to sign the **honour pledge** below at the end of this assessment.

Score Grid			
Question	Score	Question	Score
1 - 20	26.		
21.	27.		
22.			
23.			
24.			
25.			
	Total score		
	Assessed out of	50	

Honour pledge: "I swear on my honour that I have not violated the honour code before or during this assessment".

Signature or Initial: _____ **Date:** _____

ASSESSMENT RUBRICS

Learning area	Performance	Exceeds Expectations (4)	Meets Expectations (3)	Approaching Expectations (2)	Below Expectations (1)
Mathematics					

1. Without using a calculator, evaluate:
$$\frac{-2(5+3)-9\div 3+5}{-3\times -5+-2\times 4}$$

A. -14 B. 7
C. 2 D. -2

2. A solid cube has its edges measuring 3.25 cm long. Calculate the volume of the cube to 4 significant figures.

A. 34.328125 cm^3 B. 34.33 cm^3
C. 34.3281 cm^3 D. 34.328 cm^3

3. A cubic container has a volume of 7 893 cm^3. Find the height of a cuboid of the same volume if its base measures 21.3 cm by 14.5 cm. (Leave your answer to 1 d.p.)

A. 25.55 cm B. 25.556 cm
C. 26.0 cm D. 25.6 cm

4. Evaluate:
$$\sqrt[3]{\frac{343a^3}{b^3}}$$

A. $\frac{7a}{b}$ B. 7
C. $\frac{a}{b}$ D. $\frac{49a}{b}$

5. Use tables to find the cube of 0.7604.

A. 0.439669 B. 0.4397
C. 439.7 D. 4.397

6. Use tables to evaluate the following
$\sqrt[3]{0.0007319}$

A. 9.012 B. 731.4
C. 0.09012 D. 0.9012

7. Solve for x.
$4^{x+1} = 32$

A. 1.5 B. 3
C. 2 D. 2.5

8. Express 0.00000009148 in standard form.

A. 9.148 B. 9.148×10^{-6}
C. 9.148×10^{-7} D. 9.148×10^{-9}

9. What is the logarithm of 1000?

A 3 B. 10
C. 2 D. 100

10. Write $\log_{10}100$ in index form.

A. 10^2 B. $10^2 = 100$
C. $10^2 = 10$ D. $10 \times 10 = 100$

11. Use mathematical tables to evaluate:
$\sqrt{230.5} + 12.54^2$

A. 172.4338 B. 172.4
C. 172.38 D. 172.482

12. Nyambura, Akinyi and Jeptoo shared the profit of their business in the ratio 5:7:9 respectiveley. If Akinyi received Shs. 84,000 how much profit did the business yield?

A. Sh. 252 000 B. Sh. 250 000
C. Sh. 500 000 D. Sh. 200 000

13. The internal measurements of an open rectangular container which holds 2.5 litres of water are 30 cm long and 16 cm wide. The thickness of the material of the container is 5 mm. Find the volume of the material used to make the container in cm^3.

A. 508.116 cm^3 B. 771.616 cm^3
C. 372.551 cm^3 D. 5372.551 cm^3

14 Express $0.\dot{1}2\dot{3}$ as a fraction in its simplest form.

A. $\frac{213}{999}$ B. $\frac{71}{333}$
C. $\frac{213}{333}$ D. $\frac{123}{999}$

15. The diameter of a cartwheel is 63 cm. Find the number of revolutions the wheel makes when the cart travels 0.09 km 9 m. (Take $\pi = \frac{22}{7}$)

A. 198 B. 99
C. 50 D. 100

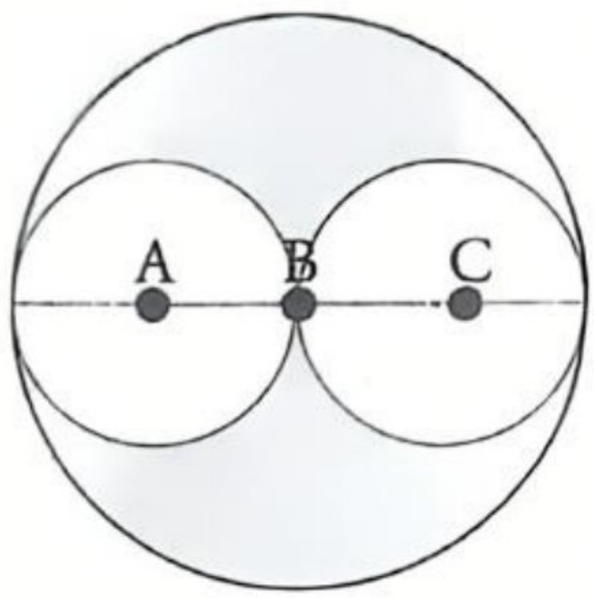
16. Kamau is five times as old as his son. Fifteen years from now, the son will be half as old as his father. Taking the present age of the son to be **x** years, find the present age of the son.

A. 15 years B. 3 years
C. 10 years D. 5 years

17. During a by-election, only 62% of the voters in a constituency of 80 000 people cast their votes. Of the votes cast, 3% were spoild and not counted. Candidate A got 48%, candidate B got 32% and candidate C got the remainder of the valid votes cast. How many votes did candidate C receive?

A. 49 600 B. 1 488
C. 48 112 D. 9 622

18. The figure below shows 3 circles with centres A, B and C respectively. The two small circles touch one another at B which is the centre of the large circle.



Given that the radius of the large circle is 28 cm, calculate the area of the shaded parts.
(Take $\pi = \frac{22}{7}$).

A. 616 cm^2 B. 1848 cm^2
C. 924 cm^2 D. 1232 cm^2

19. The size of each interior angle of a regular polygon is 120^0. What is the name of the polygon?

A. Pentagon B. Hexagon
C. Trapezium D. Rhombus

20. If 3 students score 60 marks in an assessment, 4 students score 70 marks, 5 students score 80 marks and 2 students score 90 marks, what is the median mark?

A. 70 B. 80
C. 75 D. 85

SECTION B: 30 MARKS

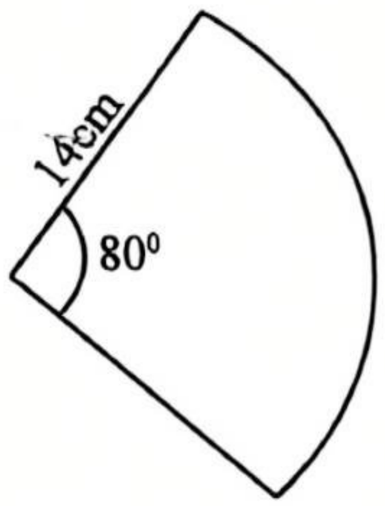
21. Mr. Oboya, a poultry farmer, buys 500 one day old chicks at a cost of shs. 80 each. For the first six months, he spends a total of Shs. 228 000 on feeds, medication and labour. Thereafter, the hens start laying continuously for 18 months at the rate of 70% per day. During the laying period, the hens consume 1 bag of complete layers feed per day at a cost of Shs. 1 000 per bag. Calculate:

(a) The total expenditure incurred in the entire period. (Take 1 month = 30 days) (2 marks)

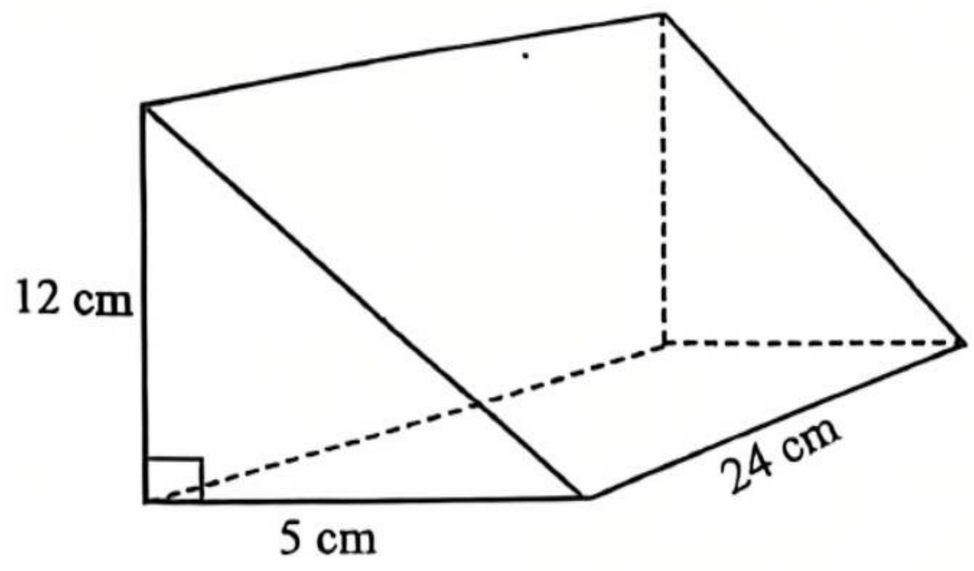
(b) The number of trays of eggs the hens produce for the entire laying period. (Take 1 tray = 30 eggs). (3 marks)

22. The cost of 3 sheep and 2 goats is sh 7 400. If 6 sheep and a goat cost sh 8 200, find the total cost of two goats and a sheep. (4 marks)

23. Calculate the area of the sector shown below. (Take $\pi = \frac{22}{7}$). (2 marks)



24. The figure below shows a giftbox in the shape of a triangula prism. Dertemine its total surface are. (3 marks)



25. A plot of land is worth sh. 800 000. Its value appreciates at 5% p.a. What will be its value in 2 years time? (3 marks)

26. Using a ruler and a pair of compasses only,

(a) Construct triangle **PQR** in which line **QR** = 4.5 cm, **PR** = 6 cm and angle **PRQ** = 120°. (3 marks)

(b) Measure line **PQ** and angle **PQR**. (2 marks)

(c) Construct a perpendicular bisector of lines **QR** and **PR**. (2 marks)

(d) Draw a circumscribed circle of triangle **PQR**. (2 marks)

(e) Measure the radius of the circle. (I mark)

27. The marks obtained by 25 students in a test marked out of 50 are given as follows: 10, 20, 20, 30, 40, 25, 25, 30, 40, 20, 25, 25, 50, 15, 25, 30, 40, 50, 40, 50, 30, 25, 25, 15 and 40

(a) What is the modal mark? (1 mark)

(b) Calculate the mean mark. (2 marks)