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Igniting thinking

GRADE 7 - 2025

THE SCHOLAR
007

SIGNAL CBE ASSESSMENT

SEVENTH 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 26 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.

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					

SECTION A (20 MARKS)

1. Rina is setting up chairs in rows for a school function. She has 37 chairs in total. When she tries to arrange them in pairs (2 chairs per row), she notices that one chair is left out. When she tries to check if the chairs can be divided equally among groups of 5, she finds that 2 chairs remain. She then wonders whether the total number of chairs is prime or not. Based on this situation, how should the number 37 be classified?
   A. Even and Prime B. Odd and Prime
   C. Odd but Not Prime D. Even but Not Prime
2. A school is organising a picnic. Each bus can carry 48 passengers. The school hires 5 buses. Out of the total seats, 37 are already reserved for teachers. How many learners can go on the picnic?
   A. 203 B. 240
   C. 203 D. 247
3. Two bells ring at different intervals. The first bell rings every 18 minutes. The second bell rings every 24 minutes. If both bells ring together at 8:00 a.m., at what time will they ring together again?
   A. 8:42 a.m B. 8:48 a.m
   C. 9:00 a.m D. 9:12 a.m
4. Mary baked a cake and cut it into 12 equal slices. She gave $\frac{1}{4}$ of the cake to her friend. Her brother ate $\frac{1}{3}$ of the cake. How many slices of cake were still left?
   A. 3 B. 4
   C. 5 D. 6
5. During a sports day race, four students covered parts of the track as follows:
   - Achieng ran $\frac{3}{4}$ of the track.
   - Brian ran $\frac{2}{3}$ of the track.

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- Carol ran $\frac{5}{6}$ of the track.

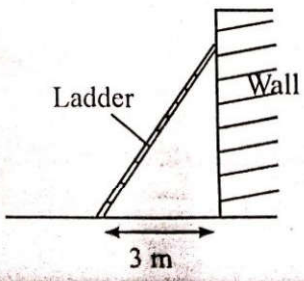
- David ran $\frac{7}{12}$ of the track.

Arrange the fractions in ascending order of the distance covered.

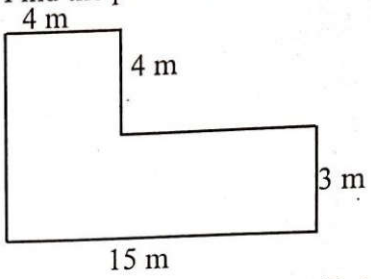
A. $\frac{7}{12}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$ B. $\frac{2}{3}, \frac{7}{12}, \frac{3}{4}, \frac{5}{6}$

C. $\frac{5}{6}, \frac{3}{4}, \frac{2}{3}, \frac{7}{12}$ D. $\frac{7}{12}, \frac{3}{4}, \frac{2}{3}, \frac{5}{6}$

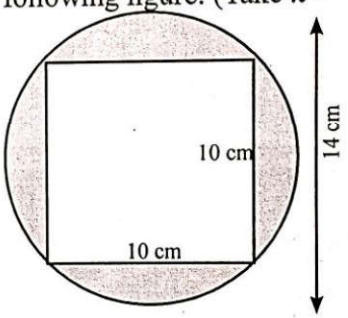
6. A car uses 0.75 litres of fuel to travel 3 km. How many kilometres can it travel on 1 litre of fuel?
   A. 2 km B. 3 km
   C. 4 km D. 5 km
7. A square swimming pool has an area of 0.81 m². What is the length of one side in centimetres?
   A. 9 m B. 0.9 cm
   C. 90 cm D. 1.2 m
8. A farmer has 3 bags, each containing $(2x + 5)$ oranges. He also gives away $(x + 7)$ oranges to his neighbour. Which simplified expression represents the total number of oranges left with the farmer?
   A. $5x + 8$ B. $7x + 22$
   C. $2x - 2$ D. $x - 2$
9. Ali bought 5 identical pens and spent a total of 150 shillings. If the cost of one pen is x, what is the cost of one pen?
   A. 15 shillings B. 25 shillings
   C. 30 shillings D. 50 shillings
10. A mobile phone shop sells phones at prices ranging between 8,000 shillings and 12,000 shillings. Which of the following inequalities correctly represents this situation?
   A. $8\,000 < x < 12\,000$
   B. $8\,000 < x \leq 12\,000$
   C. $800 \leq x \leq 1\,200$
   D. $8\,000 \leq x \leq 12\,000$
11. The diagram below shows a ladder 5 metres long leaning against a vertical wall. The foot of the ladder is on horizontal ground about 3 metres away from the wall.



How far up the wall does the ladder reach?
   A. 4 m B.6 m
   C. 8 m D.15 m
12. Find the perimeter of the following figure.

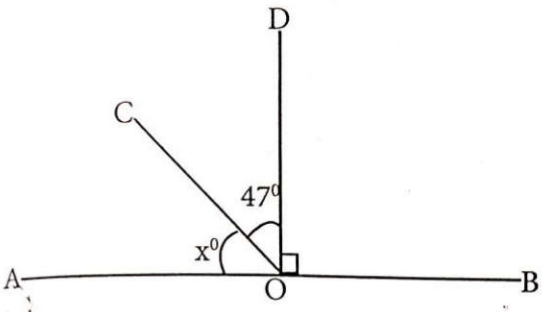


   A. 26 m B. 22 m
   C. 33 m D. 44 m
13. A bicycle wheel has a radius of 21 cm. What distance does the wheel cover in 8 complete rotations? (Take $\pi = {}^{22}/_{7}$)
   A. 132 cm B. 844 cm
   C. 1 056 cm D. 1 672 cm
14. Calculate the area of the shaded region in the following figure. (Take $\pi = {}^{22}/_{7}$)



   A. 100 cm² B. 54 cm²
   C. 154 cm² D. 254 cm²
15. An aquarium is in the shape of a cuboid measuring 80 cm long, 40 cm wide, and 50 cm high. What is the capacity of the aquarium in litres when full?
   A. 1 600 litres B. 160 litres
   C. 16 litres D. 1.6 litres
16. A car travels 180 km in 3 hours. What is its speed in m/s?
   A. 12 m/s B. 15 m/s
   C. 16.7 m/s D. 18 m/s
17. Water boils at 100°C. What is this temperature in Kelvin?
   A. 273 K B. 300 K
   C. 373 K D. 400 K
18. Lucy starts with Sh 4 000 in her M-PESA account. She sends Sh 2 000 to another registered user (fee = Sh 33), then withdraws Sh 1 000 at an M-PESA agent (fee = Sh 29). What is her remaining balance?
   A. Sh 938 B. Sh 1 038
   C. Sh 1 062 D. Sh 1 338

19. Find the value of angle **x** in the figure below.



A. 90° B. 27°
C. 33° D. 43°

20. A teacher recorded the number of siblings for 10 students in a class as follows:
1, 2, 2, 3, 1, 2, 3, 2, 1, 3
How many students have 2 siblings?
A. 2 B. 3
C. 4 D. 5

SECTION B (30 MARKS)

21. A farmer harvested 480 oranges. He gave $\frac{1}{4}$ of them to his neighbour. He then packed the remainder equally into boxes each box 6 oranges. Out of the filled boxes, he sold $\frac{1}{2}$ of them. Each box was sold at Sh 150.

(a) How many oranges did he give to his neighbour? (1 mark)

(b) How many oranges were left? (1 mark)

(c) How many boxes did he pack? (1 mark)

(d) How many boxes did he sell and how much money did he get? (2 marks)

22. A school Mathematics club is selecting members for a quiz team. The team must have at least 5 members. The team can have at most 12 members.

(a) Write down the inequality representing this situation. Let the number of team members be x. (1 mark)

(b) Represent the inequality on a number line. (3 marks)

(c) How many possible members can the team have? (1 mark)

23. A water tank is in the shape of a cylinder. It has a radius of 35 cm. Its height is 100 cm. (Use $\pi = {}^{22}/_{7}$)

(a) Calculate the volume of the tank in cm^3. (3 marks)

(b) Calculate the capacity of the tank in litres. (2 marks)

24. A sales agent sold goods worth Sh 60 000. He was paid a commission of Sh 4 800.

(a) Calculate the rate of commission (percentage commission). (3 marks)

(b) In another month he sold goods worth Sh 80 000 at the same rate of commission. Calculate his commission. (2 marks)

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

(a) Construct an isosceles triangle ABC such that BC = 8, AB = AC = 6 cm. (3 marks)

(b) Measure and state the size of angles ABC and BAC. (2 marks)

26. A teacher recorded the number of pens carried by 40 students in a class. The data collected was:

Number of pens	1	2	3	4	5	
Frequency (f)	4	12	X	7	5	Total 40

(a) What is the frequency of learners who carried 3 pens? (1 mark)

(b) Represent the information using bar graphs. (4 marks)