

KENYA JUNIOR SCHOOL EDUCATION ASSESSMENT

2026

MATHEMATICS

903 2 hours

Name _____

Assessment number _____

School _____

INSTRUCTIONS TO CANDIDATES

Answer all questions in Sections A and B.

Use a mathematical set and a non-programmable calculator where necessary.

Use $\pi = 22/7$ unless a question states otherwise.

Answer all multiple choice questions on the answer sheet provided. Use an HB pencil to shade the circle for the correct answer.

For each question, choose only one answer from A, B, C and D.

Answer the structured questions in the spaces provided. Show working where required.

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SECTION A (20 marks)

1. A club recorded the numbers 21, 23, 27 and 31 on four badges. Which pair contains prime numbers only?

- A. 27 and 31
- B. 23 and 31
- C. 21 and 23
- D. 21 and 27

2. A florist has 84 roses, 126 lilies and 42 daisies. She makes the greatest possible number of identical bunches using every flower. How many bunches does she make?

- A. 14
- B. 42
- C. 6
- D. 21

3. A mountain station records a temperature of -6°C at dawn. It falls by 9°C . What is the new temperature?

- A. -15°C
- B. -3°C
- C. 15°C
- D. 3°C

4. A craft worker uses $\frac{3}{8}$ metre of cord for each bracelet. Which expression gives the cord left from 18 metres after making 32 bracelets?

- A. $32 - 18 \times \frac{3}{8}$
- B. $18 - 32 \times \frac{3}{8}$
- C. $18 + 32 \times \frac{3}{8}$
- D. $(18 - 32) \times \frac{3}{8}$

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5. What value of t satisfies $3t - 7 = 26$?

- A. 9
- B. 11
- C. 33
- D. 19

6. A poultry unit has h hens and 14 ducks. Which expression gives the total number of birds?

- A. $h - 14$
- B. $14h$
- C. $h + 14$
- D. $14 - h$

7. A room can seat at least 45 but fewer than 72 people. Which inequality describes the number n of seated people?

- A. $45 < n \leq 72$
- B. $45 \leq n < 72$
- C. $45 < n < 72$
- D. $45 \leq n \leq 72$

8. The matrix $[(6, 8, 4), (9, 7, 2)]$ has what order?

- A. 3×2
- B. 1×6
- C. 6×1
- D. 2×3

9. A bicycle wheel of radius 28 cm turns through 90° . What distance does a point on the rim travel? Use $\pi = 22/7$.

- A. 22 cm
- B. 28 cm
- C. 44 cm
- D. 88 cm

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10. An open cylindrical tin has radius 7 cm and height 15 cm. What area of metal is needed, excluding joins? Use $\pi = 22/7$.

- A. 154 cm^2
- B. 814 cm^2
- C. 968 cm^2
- D. 660 cm^2

11. A rectangular aquarium is 45 cm long, 24 cm wide and 30 cm high. What is its capacity?

- A. 32.4 litres
- B. 3.24 litres
- C. 3,240 litres
- D. 324 litres

12. A scientist records a temperature of 298 K. What is this temperature in degrees Celsius? Take $0^\circ\text{C} = 273 \text{ K}$.

- A. 571°C
- B. -25°C
- C. 25°C
- D. 298°C

13. A service charges Ksh 12 to send Ksh 750 and Ksh 24 to withdraw Ksh 1,500. An account has Ksh 3,600 before both transactions. What balance remains?

- A. Ksh 1,386
- B. Ksh 1,350
- C. Ksh 1,314
- D. Ksh 1,338

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14. A pupil estimates a board's length as 2.2 m. The actual length is 2.0 m. What is the percentage error?

- A. 10%
- B. 11%
- C. 9.1%
- D. 20%

15. A quadrilateral has four equal sides and its opposite angles are equal, but no angle is a right angle. It is a

- A. rhombus
- B. kite
- C. rectangle
- D. trapezium

16. A playground is 56 m long. What length represents it on a plan drawn to a scale of 1 : 800?

- A. 70 cm
- B. 14 cm
- C. 7 cm
- D. 0.7 cm

17. The line $y = 3x - 4$ is perpendicular to a second line. What is the gradient of the second line?

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

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18. A photograph measuring 18 cm by 12 cm is reduced using scale factor $\frac{2}{3}$. What is its new width if 12 cm was the original width?

- A. 6 cm
- B. 8 cm
- C. 18 cm
- D. 9 cm

19. A triangle has two interior angles of 47° and 68° . What is the third angle?

- A. 65°
- B. 21°
- C. 115°
- D. 75°

20. Each letter of the word EDUCATION is written on a separate card. A card is selected at random. What is the probability of selecting a vowel?

- A. $\frac{4}{9}$
- B. $\frac{5}{9}$
- C. $\frac{1}{9}$
- D. $\frac{1}{2}$

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SECTION B (80 marks)

21. A cycling route is 12,500 m long. Neema cycles 8,936 m and walks the remaining distance.

(a) Calculate the distance she walks. (1 mark)

(b) Write the distance she cycles in words. (1 mark)

(c) Round the distance she cycles to the nearest thousand metres. (1 mark)

22. A cubical packing crate has an internal edge of 1.8 m.

(a) Calculate its internal volume. (2 marks)

(b) Cubical cartons of edge 30 cm are stacked with their edges parallel to the crate edges. How many cartons fit in the crate? (2 marks)

23. At a community reading day, the ratio of adults to teenagers to younger children is 4 : 6 : 5. There are 85 younger children.

(a) Find the number of adults. (3 marks)

(b) Find how many more teenagers than adults attend. (2 marks)

24. Eight volunteers sort donated books for 5 hours a day and finish in 9 days. Assume that all volunteers work at the same rate.

How many days would six volunteers need if they worked 4 hours a day? (4 marks)

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25. A machine displays the recurring decimal $0.24444\ldots$.

Express this decimal as a fraction in its simplest form. (4 marks)

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26. A shop sells identical rulers and identical drawing pads. Three rulers and two pads cost Ksh 294. Five rulers and four pads cost Ksh 558.

Find the price of one ruler and one drawing pad. (4 marks)

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27. The tables show trays of bread rolls and muffins delivered to two kiosks on two days.

Kiosk	Day 1 rolls	Day 1 muffins	Day 2 rolls	Day 2 muffins
M	12	7	8	11
N	16	9	10	6

(a) Represent each day's deliveries as a 2×2 matrix, taking kiosks as rows and products as columns. (1 mark)

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(b) Find the matrix representing total deliveries for the two days. (1 mark)

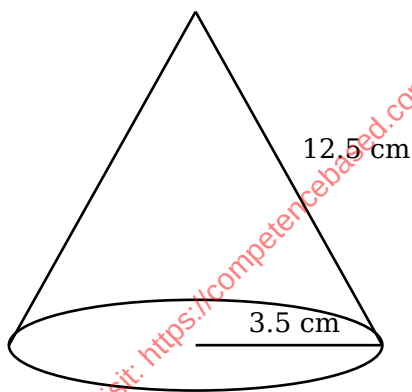
28. A straight footpath has gradient -2 and passes through the point (3, 5).

(a) Find the equation of the footpath. (2 marks)

(b) Find the coordinates of its intersection with the y-axis. (2 marks)

29. The diagram shows a solid cone. Use $\pi = 22/7$.

Not drawn to scale



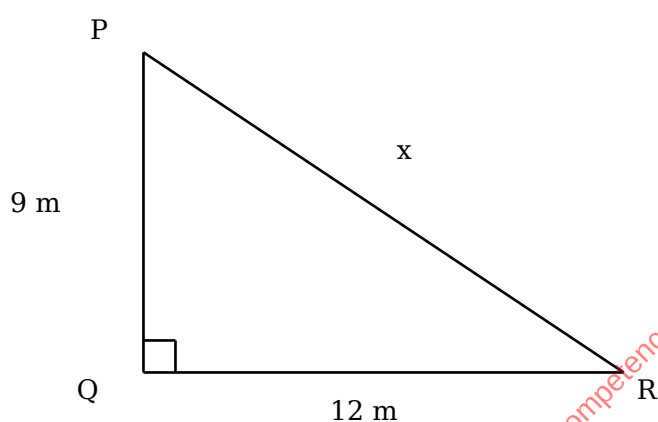
Calculate its total surface area. (5 marks)

30. A spherical metal ornament of radius 3 cm is lowered completely into water in a cylindrical jar of internal radius 6 cm. No water overflows.

Calculate the rise in water level. (4 marks)

31. A triangular support and a material sample are being examined.

(a) Calculate the length x of the support shown. (2 marks)



(b) The sample has mass 1.95 kg and volume 750 cm^3 . Find its density in g/cm^3 . (2 marks)

32. Town S lies at longitude 25°W and Town T at longitude 35°E . It is 2.20 p.m. in Town T.

Determine the local time in Town S. (4 marks)

33. For a costing exercise, a machine has a customs value of Ksh 850,000. Use the following assumed rates: import duty 12% of customs value; excise duty 10% of customs value plus import duty; VAT 15% of customs value plus both duties.

(a) Calculate import duty. (2 marks)

(b) Calculate excise duty. (2 marks)

(c) Calculate VAT. (1 mark)

34. Use a ruler and a pair of compasses for this question. Leave all construction arcs visible.

(a) Construct parallelogram EFGH with $EF = 7.5$ cm, $EH = 5.5$ cm and angle $HEF = 60^\circ$. (3 marks)

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(b) Construct a perpendicular from H to EF. Measure its length. (2 marks)

35. A courier charges Ksh 80 for each kilometre travelled. The charge y and distance x are related by $y = 80x$.

(a) Complete the table. (1 mark)

x (km)	0	0.5	1	1.5	2
y (Ksh)	0	—	80	120	—

(b) On the grid, draw the graph for $0 \leq x \leq 2$. Use 2 cm for 0.5 km on the horizontal axis and 2 cm for Ksh 40 on the vertical axis. (2 marks)



36. From a point 36 m from the foot of a vertical mast, the angle of elevation of the top is 42° . Ignore the observer's height.

Calculate the height of the mast, correct to one decimal place. (2 marks)

37. A surveyor walks 60 m due east from A to B, then 80 m due south from B to C.

(a) Using a scale of 1 cm to represent 20 m, draw the positions of A, B and C and show north. (3 marks)

(b)(i) Use your drawing to determine AC. (1 mark)

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(b)(ii) Determine the bearing of C from A. (1 mark)

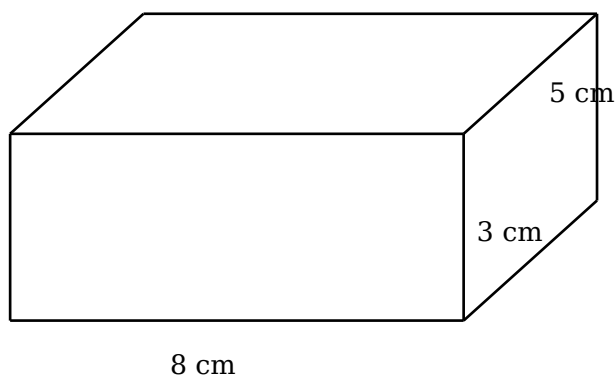
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38. A closed box has the dimensions shown.

Not drawn to scale



(a) Draw a net of the box. (2 marks)

(b) Calculate its total surface area. (3 marks)

39. A group records the following numbers of seedlings planted: 12, 16, 12, 20, 24, 16, 20, 16, 28, 20, 24, 20.

(a) Prepare a frequency distribution table. (2 marks)

(b)(i) Find the mean. (2 marks)

(b)(ii) Find the median. (1 mark)

40. A bag holds three counters labelled R, S and T. A fair spinner has two equally likely outcomes, 1 and 2. One counter is selected at random and the spinner is spun.

(a) List all possible paired outcomes. (2 marks)

(b) Find the probability of selecting S and spinning 2. (1 mark)

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MULTIPLE CHOICE ANSWER SHEET

Name _____ Assessment number _____

- | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. | (A) | (B) | (C) | (D) | 11. | (A) | (B) | (C) | (D) |
| 2. | (A) | (B) | (C) | (D) | 12. | (A) | (B) | (C) | (D) |
| 3. | (A) | (B) | (C) | (D) | 13. | (A) | (B) | (C) | (D) |
| 4. | (A) | (B) | (C) | (D) | 14. | (A) | (B) | (C) | (D) |
| 5. | (A) | (B) | (C) | (D) | 15. | (A) | (B) | (C) | (D) |
| 6. | (A) | (B) | (C) | (D) | 16. | (A) | (B) | (C) | (D) |
| 7. | (A) | (B) | (C) | (D) | 17. | (A) | (B) | (C) | (D) |
| 8. | (A) | (B) | (C) | (D) | 18. | (A) | (B) | (C) | (D) |
| 9. | (A) | (B) | (C) | (D) | 19. | (A) | (B) | (C) | (D) |
| 10. | (A) | (B) | (C) | (D) | 20. | (A) | (B) | (C) | (D) |

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