

Candidate's Name		Assessment No.	
School Name		School Code	
Candidate's Sign		Date	



004-2025
903

JUNIOR SCHOOL ASSESSMENT GRADE 9

**JESMA
004**

- MATHEMATICS - (903)

Time: 2 hours

INSTRUCTIONS TO CANDIDATES

1. Write your name and assessment number in the spaces provided above.
2. Write the name and code of your school in the spaces provided above.
3. Sign and write the date of the assessment in the spaces provided above.
4. This question paper consists of TWO sections: A and B.
5. Answer ALL the questions in section A on the separate ANSWER SHEET provided.
6. Answer ALL the questions in section B in the spaces provided in this QUESTION PAPER.
7. Show all the workings in section B in the spaces provided.
8. Non-programmable calculators may be used, except where stated otherwise.
9. Give non-exact numerical answers, correct to 3 significant figures, and one decimal place for angles in degrees, unless a different level of accuracy is specified in the question.
10. For π , use either the calculator value or 3.142.
11. Do NOT remove any page from this question paper.
12. Answer ALL the questions in English.

Task	Question Numbers						Total score
Task 1	Question	21	22	23	24	25	Max. 16
	Score						
Task 2	Question		26	27	28		Max. 11
	Score						
Task 3	Question	29	30	31	32	33	Max. 7
	Score						
Task 4	Question	34	35	36	37	38	Max. 27
	Score						
Task 5	Question		39	40			Max. 9
	Score						

This paper consists of 8 printed pages.

Candidates should check the question paper to ascertain that
all the pages are printed as indicated and that no questions are missing.

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SECTION A: (20marks)

1. What is the value of digit 7 in the number 473621428?

A. Seven million
B. Seventy million
C. Seven hundred thousand
D. Seven thousand

2. Round off 314.54 to the nearest tenth.

A. 314 B. 314.6
C. 314.5 D. 314.50

3. Work out;
 $(-8) + (-3) - (+2)$

A. -9 B. 13
C. -11 D. -13

4. Evaluate

$$15 + 3 \times (8 - 2^2) \div 6$$

A. 21 B. 17
C. 12 D. 8

5. In a right-angled triangle, the hypotenuse is 13cm and one leg is 5cm. What is the length of the other leg?

A. 15 B. 7
C. 8 D. 12

6. A sector of a circle has a radius of 7cm and a central angle of 90° . What is the perimeter of the sector?

A. 11cm B. 18cm
C. 25cm D. 36cm

7. The area of a rectangle is given by

$$A = x(x + 5).$$

If $x = 3$, what is the area of the rectangle?

- A. 15 B. 30
C. 24 D. 8

8. If three workers can complete a task in 6 days, how many days will 2 workers take to complete the same task?

- A. 4 days B. 9 days
C. 12 days D. 18 days

9. A shopkeeper buys an item for sh.200 and sells it for sh.250. What is the percentage profit?

- A. 25% B. 30%
C. 20% D. 50%

10. Which of the following fractions is the largest?

$$\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{4}{5}$$

- A. $\frac{4}{5}$ B. $\frac{1}{2}$
C. $\frac{2}{3}$ D. $\frac{3}{4}$

11. In the matrix $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, what is the position of the element 3?

- A. Row 1, column 2
B. Row 2, column 1
C. Row 2, column 2
D. Row 1, column 1

12. An agent earns 5% commission on sales. If the total sales are sh.50000, what is the commission?

- A. Sh.5000 B. Sh.3500
C. Sh.2500 D. Sh.3000

13. A bag contains 4 red balls and 6 blue ones. What is the probability of drawing a red ball?

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

14. Arrange the following fractions in descending order.

$\frac{3}{5}, \frac{1}{3}, \frac{7}{10}, \frac{2}{7}$

- A. $\frac{2}{7}, \frac{7}{10}, \frac{1}{3}, \frac{3}{5}$
B. $\frac{7}{10}, \frac{3}{5}, \frac{1}{3}, \frac{2}{7}$
C. $\frac{2}{7}, \frac{1}{3}, \frac{3}{5}, \frac{7}{10}$
D. $\frac{3}{5}, \frac{1}{3}, \frac{2}{7}, \frac{7}{10}$

15. Find the equation of a line passing through the points $(-2, 3)$ and $(4, 1)$

- A. $y = \frac{1}{3}x + 7$
B. $y = 7 + \frac{3}{5}x$
C. $y = -\frac{1}{3}x + \frac{7}{3}$
D. $y = -\frac{1}{3}x + \frac{2}{3}$

16. Form an algebraic expression for the sum of a number y and twice another number x .

- A. $y + 2x$ B. $2y + x$
C. $y - 2x$ D. $2y - x$

17. Grade 9 learners were asked to convert 300K to degree celsius. What did they get?

- A. 27°C B. 57°C
C. 273°C D. 573°C

18. Which of the following is not a property of a parallelogram?

- A. Opposite angles are equal
B. Opposite sides are equal
C. Diagonals bisect at right angles
D. Adjacent angles are supplementary

19. The quantity of rice in a store is increased in the ratio 3:5. If the initial quantity was 120kg, what is the new quantity?

- A. 180kg B. 200kg
C. 150kg D. 240kg

20. What is the sum of the interior angles of a pentagon?

- A. 360° B. 540°
C. 720° D. 900°

SECTION B: (80marks)

21. Evaluate; (3mks)

$$12 - \left(\frac{4}{2} + 3 \times 2\right) \div \frac{3}{2}$$

22. Find the surface area of a rectangular-based prism measuring 5cm by 4cm by 3cm. (3mks)

23. Given the matrices

$$A = \begin{bmatrix} 3 & 5 \\ 2 & 4 \end{bmatrix}, \quad B = \begin{bmatrix} 1 & 2 \\ 3 & 1 \end{bmatrix}$$

find $A - B$ (3mks)

24. A machine takes 6 hours to produce 120 items. How long will it take 3 similar machines to produce 300 items at the same rate? (3mks)

25. Solve the simultaneous equations using substitution method. (4mks)

$$3x + 2y = 12$$

$$2x - y = 3$$

26. A farmer harvested 800kg of maize last season and 960kg this season. Calculate the percentage increase in the harvest. (3mks)

27. A business person took a loan of sh.10000 and repaid it after 2 years. If the repayment was sh.12100 under compound interest, find the ratio of interest per annum. (4mks)

28. The following numbers represent the ages of 10 learners in years:
12, 15, 14, 12, 16, 14, 15, 12, 14 and 13.

a) Find the mode of the data set. (2mks)

b) Find the median of the data set. (2mks)

29. Use a calculator to evaluate;

a) $(49.8)^3$ (2mks)

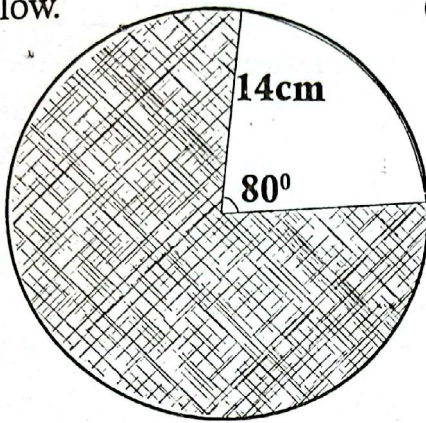
b) 0.048 (2mks)

30. Write the following expressions in index form.

a) $\log_{10} 0.001 = -3$ (2mks)

b) $\log_{10} 1000 = 2$ (2mks)

31. Calculate the area of the shaded part below. (3mks)



32. Solve the inequality (3mks)

$$3x + 2 > 11$$

33. Express 2.16 as a fraction. (3mks)

34. A pick-up consumes 18 litres of diesel to travel 270km.

- a) How much diesel will the pick-up consume to travel 90km at the same speed? (3mks)

- b) How many kilometres will the pick-up cover if it consumes 27 litres? (2mks)

35. A farmer planned to use his land as follows;

10% for sweet potatoes

20% for peas

30% for maize

and the rest for cabbages

- a) Work out the angle representing the cabbages. (3mks)

- b) If all the land was 24 hectares, how many hectares does each crop occupy? (4mks)

36. In the space provided below, construct a triangle ABC with sides $AB = 6\text{cm}$, $BC = 8\text{cm}$ and $AC = 10\text{cm}$. Then construct a circle touching all the three sides of the triangle. Calculate the radius of the circle. (4mks)

37. Three business partners Simon, Steve and Sonia decided to share the profit of their business in the ratio 2:3:5. If the total profit earned is sh.640000, calculate

a) the individual share of each partner. (3mks)

b) what percentage of the total profit did each partner receive? (3mks)

38. A straight line joins two points with co-ordinates (2, 1.5) and (1.8, 7)

a) Determine the gradient of the line. (2mks)

b) Determine the equation of the line. (3mks)

39. Grade 9 learners added two numbers and the result was less than 5.

a) Form an inequality from the statement. (2mks)

b) Represent the inequality on a graph. (3mks)

40. Calculate the surface area of the pyramid below. (4mks)

