



EXAMINATIONS COUNCIL OF ZAMBIA

PRIMARY SCHOOL LEAVING EXAMINATION – 2024



## Mathematics

SUBJECT 3/1

90 MINUTES

TD/M3/PSLE/2024

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- 1 Read these instructions carefully.
- 2 **DO NOT** turn this page before you are told. Your teacher will tell you when to turn this page to begin the questions.
- 3 There are **60** questions in this **MATHEMATICS PAPER**. You will be given **EXACTLY 90 MINUTES** to do the questions.
- 4 For each question, four answers are given, but only one of the four is right. Work out which is the **BEST** answer. Then, on your **ANSWER SHEET**, mark the box completely by shading the answer space of the letter of your choice. If you had chosen answer **D** for a question, you would show it like this:-



- 5 You must **SHADE** your answer spaces **COMPLETELY** and **DARKLY** using an **HB** pencil. If you have to change your answer, you must rub out the shading **VERY NEATLY** before shading the new one. **USE A CLEAN RUBBER.**
- 6 When you have finished one page, go straight on without waiting to be told. If you have time left at the end of the question paper, use it to check your work carefully.
- 7 Look at your **ANSWER SHEET**. On the top left hand side are boxes which should have Examination Year, your School Number and Examination Number. It should also say **Subject 3 Paper 1.**
- 8 Look at your **ANSWER SHEET** again. At the bottom left hand side, it should have your Surname, Forename, Subject – **Mathematics**, Name of Primary School and your Secondary School of choice.
- 9 **PUT UP YOUR HAND NOW IF:** You have any question.

You have the wrong Answer Sheet.

You will **NOT** be able to ask questions once the examination has begun.

**DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD.  
USE ONLY AN HB / PENCIL FOR YOUR ANSWERS.**

- 1 In expanded form,  $5^3$  can be written as ...  
 A  $3 \times 5$ .  
 B  $5 \times 3$ .  
 C  $5 \times 5 \times 5$ .  
 D  $3 \times 3 \times 3 \times 3 \times 3$ .
- 2 A school has 750 books. If the school receives 160 more books, how many books does the school have altogether?

$$\begin{array}{r} 750 \\ + 160 \\ \hline 910 \end{array}$$

- A 590  
 B 610  
 C 690  
 D 910 x

3  $2.813 + 1.909 =$

$$\begin{array}{r} 2.813 \\ + 1.909 \\ \hline 4.722 \end{array}$$

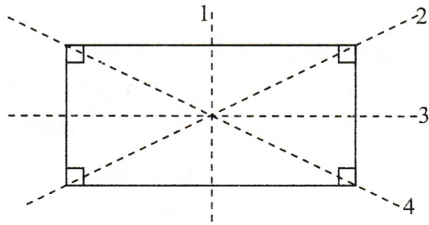
- A 4.722 x  
 B 4.712  
 C 3.722  
 D 3.712

4  $459\,899 + 81\,445 =$

$$\begin{array}{r} 459899 \\ + 81445 \\ \hline 541344 \end{array}$$

- A 540 334  
 B 540 344  
 C 541 334  
 D 541 344 x

5 Which of the lines on the shape below are lines of symmetry?



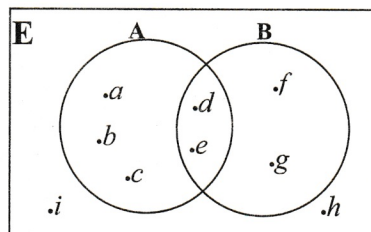
- A 3 and 4  
 B 2 and 3  
 C 1 and 3  
 D 1 and 2

6 
$$\begin{array}{r} 3\,623 \\ - 1\,894 \\ \hline \end{array}$$

$$\begin{array}{r} 3623 \\ - 1894 \\ \hline 1729 \end{array}$$

- A 1 729 x  
 B 1 739  
 C 1 829  
 D 1 839

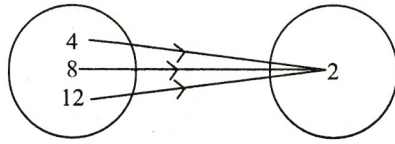
- 7 Express 0.15 as a percentage.  
 A 51%  
 B 15%  
 C 1.5%  
 D 0.15%
- 8 A motorist bought 18.54 litres of diesel for his car. Express the litres of diesel to one decimal place.  
 A 18.5 litres  
 B 18.6 litres  
 C 19.0 litres  
 D 19.4 litres
- 9 The next number in the sequence 60, 45, 30, is ...  
 A 29.  
 B 25.  
 C 20.  
 D 15.
- 10 If  $p - 4 = 16$ , then  $p$  equals ...  
 A 4.  
 B 12.  
 C 20.  
 D 32.
- 11 Study the diagram below.



List the set  $A \cap B$ .

- A  $\{f, g\}$   
 B  $\{d, e\}$   
 C  $\{i, h\}$   
 D  $\{a, b, c, d, e, f, g\}$

12 The mapping shown in the diagram below is a ...



- A one to one mapping.
- B one to many mapping.
- C many to one mapping.
- D many to many mapping.

13  $165 \times 33 =$

- A 4 345
- B 4 445
- C 5 345
- D 5 445

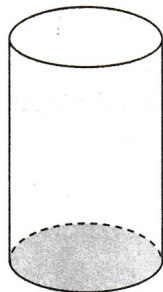
*Handwritten:*  $165 \times 33$

14  $130.453 - 27.66 =$

- A 102.793
- B 102.893
- C 103.893
- D 103.793

*Handwritten:*  $130.453 - 27.66$   
 $\begin{array}{r} 130.453 \\ - 27.66 \\ \hline 102.793 \end{array}$

15 The shape shown below is called a ...



- A cone.
- B cuboid.
- C cylinder. *x*
- D pyramid.

16 A motor bike was bought at K25 000.00 and later sold at K18 000.00. Calculate the loss.

- A K43 000.00
- B K25 000.00
- C K18 000.00
- D K7 000.00

*Handwritten:*  $\begin{array}{r} 25000.00 \\ - 18000.00 \\ \hline 7000.00 \end{array}$

use by haccary samutu mwa or best my dear

17 A man had 97.5kg of maize for sale. If he sold 20.5kg, how many kilograms of maize were not sold?

- A 118kg
- B 117kg
- C 77kg
- D 76kg

$$\begin{array}{r}
 97.5 \text{ kg} \\
 - 20.5 \text{ kg} \\
 \hline
 77
 \end{array}$$

18 What is the Highest Common Factor of 12, 18 and 24?

- A 8
- B 6
- C 4
- D 2

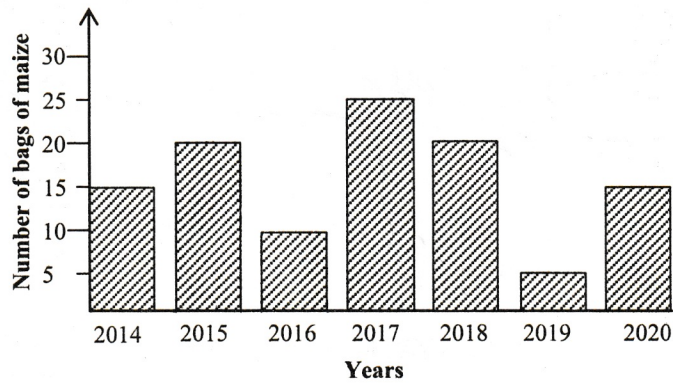
19 A classroom can be cleaned by 5 girls in 30 minutes. How many minutes can 6 girls take to clean the same classroom if they work at the same rate?

- A 5 minutes
- B 15 minutes
- C 20 minutes
- D 25 minutes

20 Find the Lowest Common Multiple of 4, 5 and 8.

- A 40
- B 18
- C 8
- D 4

21 The bar chart below shows the production of maize at a certain farm from 2014 to 2020.



What was the total number of bags of maize produced in 2014 and 2017?

- A 10
- B 20
- C 25
- D 40

- 22 Find the mode of 14, 3, 11, 9 and 3.  
 A 3  
 B 8  
 C 9  
 D 11
- 23 A company bought a car at \$3 500. How much will 7 cars of the same type cost altogether?  
 A \$500  
 B \$3 493  
 C \$3 507  
 D \$24 500
- 24 Find the value of  $6 + (5 \times 3)$ .  
 A 21  
 B 33  
 C 48  
 D 90
- 25 A car covered 354km in 3 hours. Calculate the average speed of the car on this journey.  
 A 1 062km/h  
 B 1 052km/h  
 C 357km/h  
 D 118km/h
- 26 What is  $\frac{3}{4}$  of 200?  
 A 150  
 B 53  
 C 50  
 D 15
- 27 
$$\begin{array}{r} 13.29 \\ \times 2.1 \\ \hline \end{array}$$
  
 A 2 290.9  
 B 279.09  
 C 27.909  
 D 2.7909

$$\begin{array}{r} \$ 3500 \\ \times 7 \\ \hline 24500 \end{array}$$

Handwritten solution for Q23 using tally marks: 3500 is represented by 35 groups of 100 tally marks. Multiplying by 7 results in 245 groups of 100 tally marks, which is 24 500.

$$6 + 5 \times 3 = 6 + 15 = 21$$

Handwritten solution for Q24:  $6 + 5 \times 3$  is written. Below it, 5 groups of 3 tally marks are drawn, representing 15. Adding 6 more tally marks results in 21 tally marks.

Handwritten solution for Q25:  $354 \text{ km} \div 3 \text{ hours} = 118 \text{ km/h}$ . The calculation is shown as  $354 \rightarrow 3 \text{ hrs}$ .

$$\begin{array}{r} 354 \\ \times 3 \\ \hline 1052 \end{array}$$

Handwritten solution for Q26:  $\frac{3}{4} \times 200 = 150$ . The calculation is shown as  $354 \times 3 = 1052$  (likely a typo for  $354 \div 3 = 118$ ).

$$\begin{array}{r} 3 \\ \overline{) 13.29} \\ 9 \\ \hline 42 \\ 21 \\ \hline 9 \\ 9 \\ \hline 0 \end{array}$$

Handwritten solution for Q27:  $13.29 \times 2.1 = 27.909$ . The calculation is shown as  $3 \overline{) 13.29}$  with a multiplier of 2.1, resulting in 27.909.

- 28 Which of the following are multiples of 8?  
A 1, 8, 16, 24  
B 8, 16, 24, 32  
C 2, 4, 16, 32  
D 1, 2, 4, 8
- 29 Express the ratio 5 : 10 : 25 in its lowest terms.  
A 5 : 10 : 5  
B 5 : 2 : 5  
C 1 : 2 : 5  
D 1 : 2 : 4
- 30 Express 0.11 as a common fraction.  
A  $\frac{1}{100}$   
B  $\frac{11}{100}$   
C  $\frac{1}{10}$   
D  $\frac{11}{10}$
- 31  $+3 + (-5) =$   
A +8  
B +2  
C -2  
D -8
- 32 Given that set A = {1, 2, 3, 5, 7, 11} and Set B = {2, 5, 7, 13, 15}, list set  $A \cup B$ .  
A {1, 2, 3, 5, 7, 11, 13, 15}  
B {1, 2, 3, 5, 7, 11}  
C {2, 5, 7}  
D {13, 15}
- 33 A polygon with six sides is called a ...  
A trapezium.  
B rhombus.  
C pentagon.  
D hexagon.

- 34 A circular garden has a diameter of 20m. Calculate its circumference taking  $\pi$  as 3.14.
- A 23.24m  
 B 62.80m  
 C 324.0m  
 D 628.0m
- 35 Arrange the numerals VII, IX, XV, XII in order of size from the largest to the smallest.
- A IX, XII, VII, XV  
 B XV, IX, XII, VII  
 C XV, XII, IX, VII  
 D VII, XV, IX, XII
- 36 A school has 20 teachers. If  $\frac{3}{4}$  of the teachers are female, find the number of female teachers at this school.
- A 60  
 B 15  
 C 10  
 D 5
- 37 Arrange the following numbers from the smallest to the biggest: 1, 2, 0, -3, -1.
- A 2, 1, 0, -1, -3  
 B 2, -3, -1, 1, 0  
 C -3, -1, 1, 0, 2  
 D -3, -1, 0, 1, 2
- 38 Convert 86 to a number in base 8.
- A  $16_{\text{eight}}$   
 B  $61_{\text{eight}}$   
 C  $126_{\text{eight}}$   
 D  $621_{\text{eight}}$
- 39  $\frac{1}{4} \times \frac{8}{9} =$
- A  $\frac{2}{9}$   
 B  $\frac{4}{9}$   
 C  $\frac{9}{32}$   
 D  $\frac{1}{32}$

3.14 =  $\pi$   
 $30 \times 3.14$   
 $303.14$

XV > XII > VII > IX

-3, -1, 0, 1, 2

8 | 86 | 5  
 8 | 4 | 1

9  
 (1111)  
 (1111)  
 (1111)  
 (1111)  
 (1111)

- 40  $372 \div 12 =$   
 A 30  
 B 31  
 C 32  
 D 301
- 41 
$$\begin{array}{r} 1\ 010_{\text{two}} \\ + 111_{\text{two}} \\ \hline 1\ 101 \end{array}$$
  
 A  $10001_{\text{two}}$   
 B  $11101_{\text{two}}$   
 C  $10101_{\text{two}}$   
 D  $11101_{\text{two}}$
- 42 If  $19 + w < 36$ , then ...  
 A  $w > 17$ .  
 B  $w < 17$ .  
 C  $w > 55$ .  
 D  $w < 55$ .
- 43 If the exchange rate on a particular day was \$1 to K17.60, how much was \$6 in Kwacha?  
 A K62.60  
 B K65.60  
 C K102.60  
 D K105.60
- 44 Convert 40 to a number in base 5. 
$$\begin{array}{r|l} 5 & 40 \\ \hline 6 & 8 \\ & 5 \\ & 3 \end{array}$$
  
 A  $200_{\text{five}}$   
 B  $130_{\text{five}}$   
 C  $30_{\text{five}}$   
 D  $13_{\text{five}}$
- 45 LXXIX in Arabic numerals is ...  
 A 129.  
 B 81.  
 C 79.  
 D 39.
- 46 Find 25% of 500.  
 A 20  
 B 125  
 C 475  
 D 525

47 What is the median of 7, 13, 3, 11 and 5?

- A 39
- B 13
- C 11
- D 7

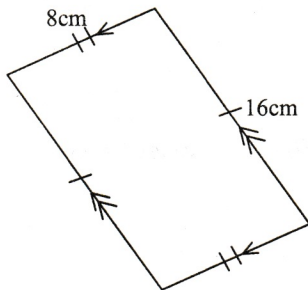
48  $\frac{3}{4} - \frac{1}{3} =$  2

- A  $\frac{4}{7}$
- B  $\frac{5}{12}$
- C  $\frac{3}{12}$
- D  $\frac{1}{7}$

49 A girl got 18 out of 25 marks in a test. Express the marks she got as a percentage.

- A 18%
- B 25%
- C 43%
- D 72%

50 Calculate the perimeter of the shape below.

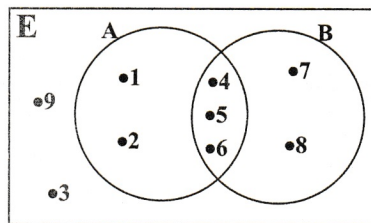


- A 48cm
- B 24cm
- C 8cm
- D 2cm

51 A school had 441 pencils to be packed in boxes of the same size. If one box holds 21 pencils, how many boxes were packed?

- A 20
- B 21
- C 420
- D 462

- 52 Round off 166 872 to the nearest thousand.
- A 167 000  
B 166 900  
C 166 800  
D 166 000
- 53 The bus fare from Town A to Town B is K155.00. A boy travelled from Town A to Town B by bus. How much change did he receive from K200.00?
- A K155.00  
B K145.00  
C K55.00  
D K45.00
- 54 Study the Venn diagram below.

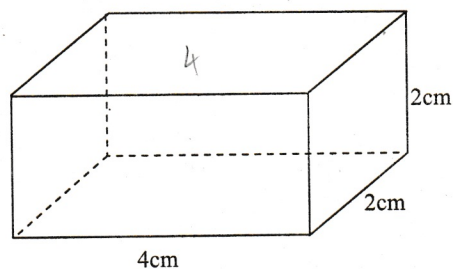


- List the set  $A \cup B$ .
- A {4, 5, 6}  
B {1, 2, 7, 8}  
C {1, 2, 4, 5, 6, 7, 8}  
D {1, 2, 3, 4, 5, 6, 7, 8, 9}
- 55 A suit costing K800.00 was sold at a discount of K160.00. Calculate the selling price.
- A K540.00  
B K640.00  
C K740.00  
D K960.00
- 56 Evaluate  $3^4$ .
- A 81  
B 27  
C 12  
D 7

57 The price of a shirt is K200.00. If the shirt was sold at a discount of 25%, how much was the discount?

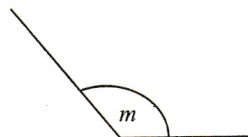
- A K175.00
- B K150.00
- C K50.00
- D K25.00

58 Find the volume of the following shape.



- A  $32\text{cm}^3$
- B  $16\text{cm}^3$
- C  $8\text{cm}^3$
- D  $6\text{cm}^3$

59 The angle marked  $m$  below is called ...



- A a reflex angle.
  - B a right angle.
  - C an obtuse angle.
  - D an acute angle.
- 60 Find the area of a circle with radius 5cm. ( $\pi = 3.14$ )
- A  $78.50\text{cm}^2$
  - B  $78.30\text{cm}^2$
  - C  $31.40\text{cm}^2$
  - D  $15.70\text{cm}^2$

**STOP! PLEASE CHECK ALL YOUR WORK CAREFULLY**