



EXAMINATIONS COUNCIL OF ZAMBIA

JUNIOR SECONDARY SCHOOL LEAVING EXAMINATION (GRADE 9) – 2009

MATHEMATICS 401/1

PAPER 1

(INTERNAL & EXTERNAL CANDIDATES)

TIME: 2 HOURS

MARKS: 50

NO READING TIME

INSTRUCTIONS TO CANDIDATES

1. Pull out the Answer Sheet from the question paper.
2. Write your name, examination number and school/centre on the Answer Sheet.

This paper consists of Sections **A** and **B** only. There are thirty (30) questions in this paper.

Section A: Answer **all** questions. Write down the letter of the answer by marking a cross (X) on the Answer Sheet provided.

Question 1 – 10: 1 mark each.

Section B: Answer **all** questions. Write down the answers in the spaces provided on the Answer Sheet.

Question 11 – 30: 2 marks each.

Note: 1 No paper for rough work is to be provided. Any working should be done on the question paper in the spaces provided.

2 **Cell phones and calculators** are **not** allowed in the examination room.

3 Only the Answer Sheet should be handed in.



EXAMINATIONS COUNCIL OF ZAMBIA
ANSWER SHEET FOR MATHEMATICS PAPER 1 – 2009

NAME: _____

EXAMINATION NUMBER: _____

SCHOOL/CENTRE: _____

TOTAL MARKS: _____

Section A

For each question, mark your choice with a cross (X)

1					2					3					4					5				
A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E

6					7					8					9					10				
A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E

Section B

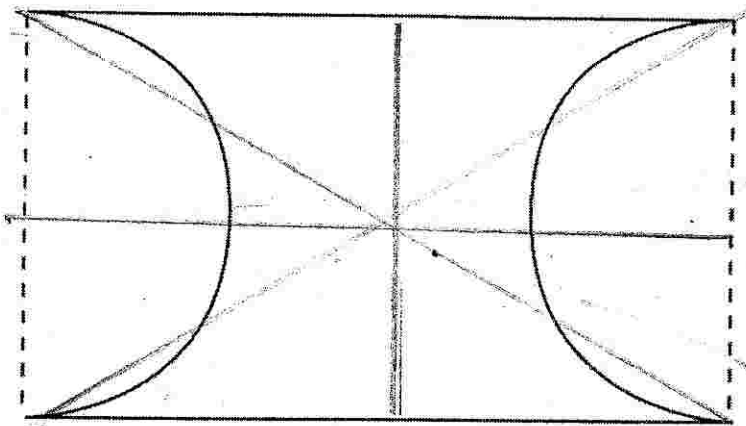
Write your answers in the spaces provided. Working must **NOT** be done on this paper.

11	21	$x =$	,	$y =$
12 (a) (b)	22			
13	23			
14	24			
15	25			
16 (a) (b)	26			
17	27			
18 (a) (b)	28			
19 (a) (b)	29 (a) (b)			
20 (a) (b)	30			

SECTION A [10 MARKS]

Space for working

- 1 State the number of lines of symmetry in the figure below.



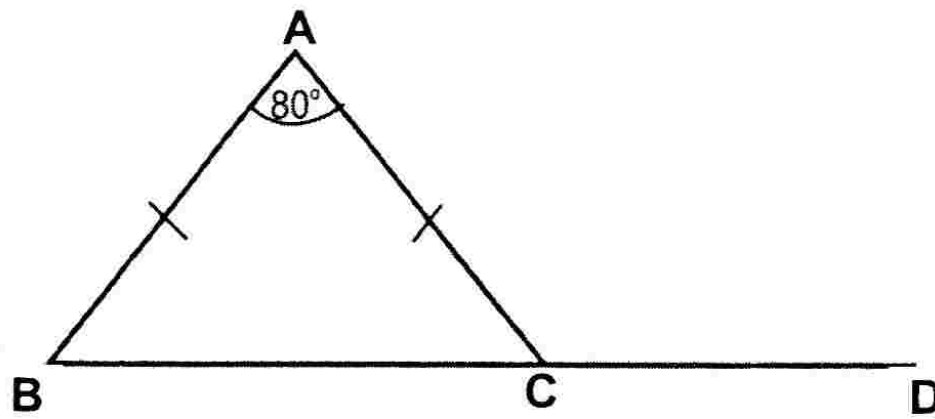
- A 0
B 1
C 2
D 3
E 4
- 2 Evaluate $\frac{1}{3} + \frac{1}{2}$.

- A $\frac{2}{5}$
B $\frac{1}{6}$
C $\frac{1}{5}$
D $\frac{3}{6}$
E $\frac{5}{6}$

- 3 From the prime numbers which are less than 10, find the difference between the largest prime number and the smallest prime number.

- A 5
B 6
C 7
D 8
E 9

- 4 In the diagram below, $AB = AC$ and angle $BAC = 80^\circ$. Calculate angle ACD .



- A 80°
B 100°
C 120°
D 130°
E 180°
- 5 Express 16.927 in standard form correct to 3 significant figures.
- A 1.69×10^2
B 1.69×10^1
C 1.70×10^2
D 1.60×10^1
E 1.70×10^1
- 6 Write down the next term in the Sequence 58, 53, 46, 37, 26, ...
- A 13
B 14
C 17
D 15
E 16

7 Given that $p = 1\frac{1}{2}$ and $q = \frac{5}{6}$, find the value of $\frac{p}{q}$.

A $\frac{5}{9}$

B $\frac{4}{5}$

C $1\frac{1}{5}$

D $1\frac{1}{4}$

E $1\frac{4}{5}$

8 Factorise completely $91y^2z - 7y$.

A $y(91yz - 7)$

B $yz(91y - 7)$

C $7(13y^2z - y)$

D $7y(13yz - 1)$

E $7y(13z - 1)$

9 Which of the following is a regular polygon?

A Rectangle

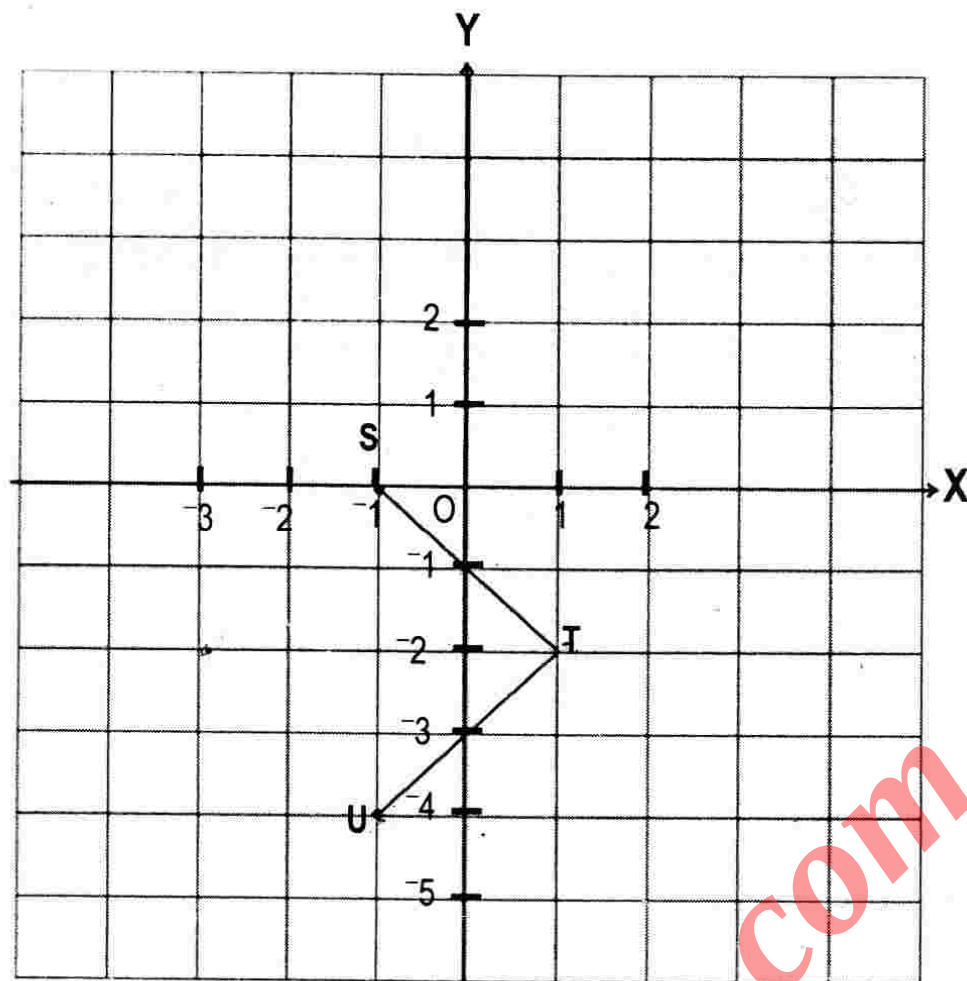
B Parallelogram

C Square

D Trapezium

E Kite

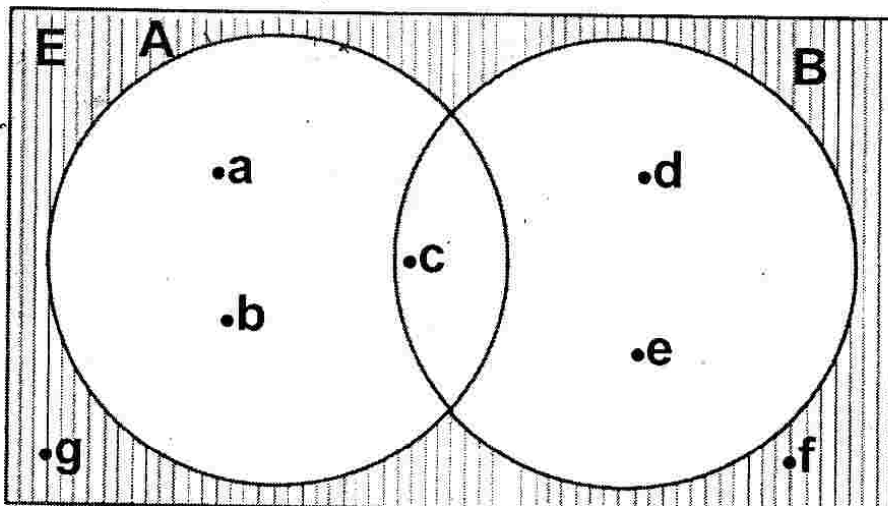
- 10 Three of the vertices of a quadrilateral STUV are $S(-1,0)$, $T(1,-2)$ and $U(-1,-4)$. If the quadrilateral is a square, give the coordinates of the fourth vertex V.



- A $(-3, -4)$
B $(-1, -2)$
C $(-3, -2)$
D $(-1, -4)$
E $(-2, -3)$

SECTION B [40 MARKS]

- 11 Solve the equation $2(p + 5) = 1 - p$.
- 12 The Venn diagram below illustrates the relationship between set A and Set B.



- (a) List the set $A' \cap B$.
- (b) Using Set notation, describe the shaded region.

- 13 Given that $m = \frac{y - c}{x}$, make y the subject of the formula.
- 14 Solve the inequation $13 - 3x > 4$.
- 15 Express $\frac{a+1}{2} - \frac{2a-4}{5}$ as a single fraction in its simplest form.
- 16 Mr Phiri's water meter readings are shown on the diagrams below.

9 241

Previous reading

9 316

Current reading

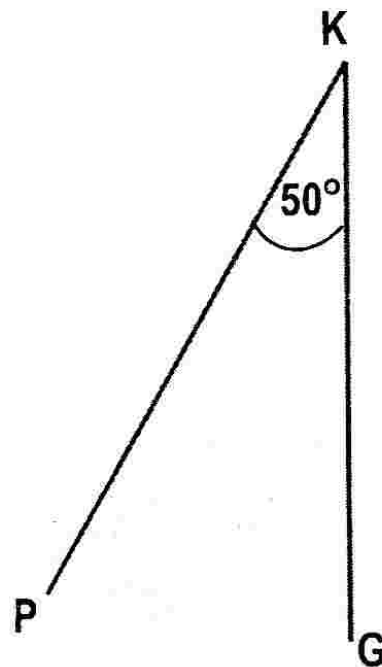
- (a) Find the number of units used.
- (b) Given that each unit costs K160 and that there is a fixed charge of K3 375, find the total amount Mr Phiri paid.
- 17 The length and breadth of a school Staff room are in the ratio 5:4. Find the length of the Staff room if the breadth is 3.6m.

18 The following marks were obtained by seven pupils in a Mathematics test: 5, 3, 4, 6, 7, p , 8.

(a) Given that the mode is 3, write down the value of p .

(b) With the mode given in part (a) above, find the LCM of the mode and median marks.

19 In the diagram below, K is due north of G and angle GKP is 50° .

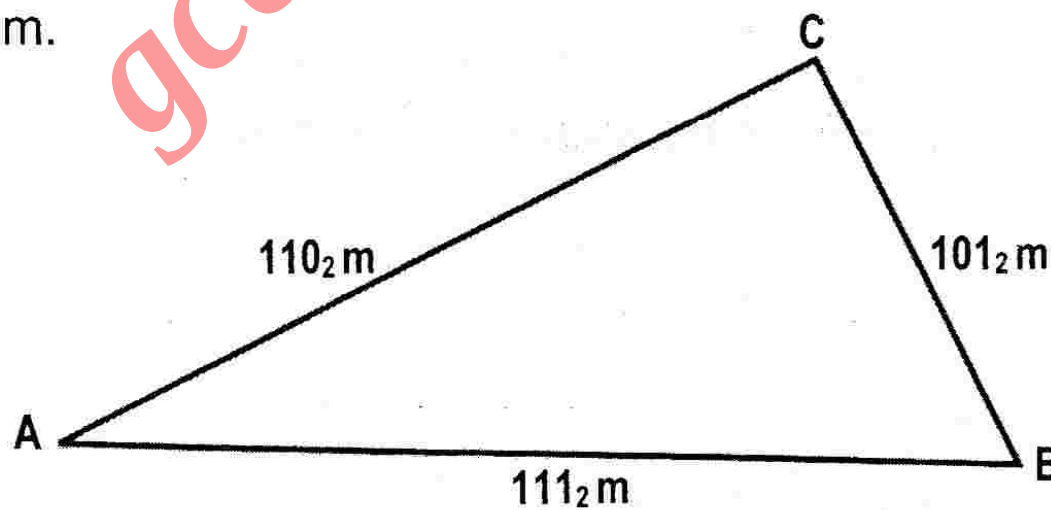


Find:

(a) the bearing of P from K ,

(b) the bearing of K from P .

20 In triangle ABC below, $AB = 111_2$ m, $AC = 110_2$ m and $BC = 101_2$ m.



Find the perimeter of the triangle giving your answer in

(a) base two,

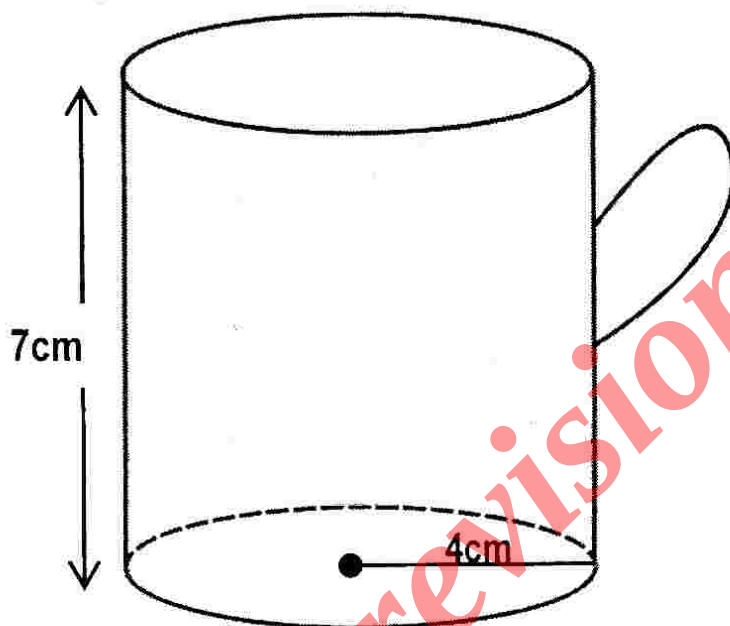
(b) base ten.

- 21 Solve the simultaneous equations

$$3x - 2y = -1,$$

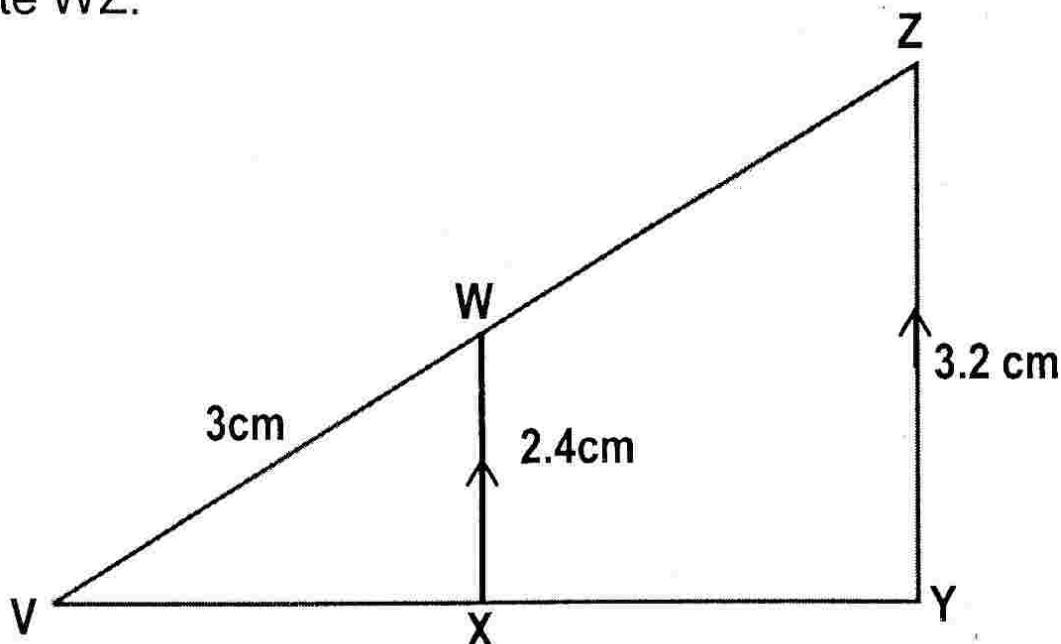
$$x + 2y = 5.$$

- 22 Himoonga received K96 000 interest after investing K480 000 at 4% per annum. How long was the money invested?
- 23 Calculate the length of a diagonal of a rectangle whose sides are 12cm by 5cm.
- 24 The diagram below shows a cylindrical cup with radius 4cm and height 7cm.



Calculate the volume of the water in the cup when it is $\frac{3}{4}$ full,
given that $\pi = \frac{22}{7}$.

- 25 In the diagram below, XW and YZ are parallel, VW = 3cm, WX = 2.4cm and YZ = 3.2cm. Calculate WZ.



- 26 The scale on a map is 1: 50 000. If the distance between two villages on the map is 12cm, find the actual distance between the two villages in **kilometres**.
- 27 A radio announcer starts work at 22 00 hours and knocks off at 06 55 hours the following day. How long did she work?
- 28 A woman sold her car for K45 000 000 at a loss of 10%. What was the cost price of the car?
- 29 A regular polygon has an exterior angle of 60° . Find:
- (a) the size of each interior angle,
 - (b) the number of sides.
- 30 Nagogo School production Unit has enough pig feed to feed 18 pigs for 4 weeks. If 6 pigs are sold before starting to use the feed, how much longer will the pig feed last?