



EXAMINATIONS COUNCIL OF ZAMBIA

JUNIOR SECONDARY SCHOOL LEAVING EXAMINATION (GRADE 9) — 2016

Mathematics 401/1

Paper 1

(INTERNAL AND 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**.
- 3 There are **two (2)** sections in this question paper, Section A and B.
- 4 Answer **all** the questions in both sections on the Answer Sheet provided.
- 5 In Section A, for each question, **four (4)** suggested answers are given, A, B, C and D. Choose the correct answer and show it on the Answer Sheet by marking it with a cross (X).

For example, if the answer is D

A	B	C	<input checked="" type="checkbox"/> D
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- 6 No paper for rough work is to be provided. Any working should be done on the question paper in the spaces provided.
- 7 Only the **Answer Sheet** should be handed in.

Information for candidates

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

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO



ANSWER SHEET FOR GRADE 9 MATHEMATICS PAPER 1 – 2016

NAME OF CANDIDATE: _____

EXAMINATION NO.: _____

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	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D

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

TOTAL MARKS for Section A

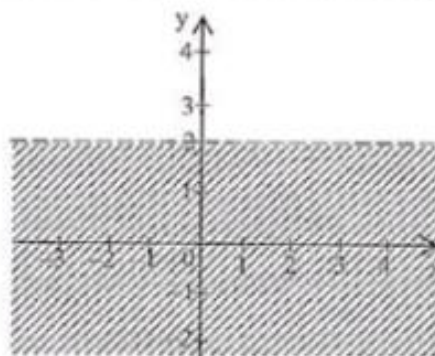
Section BWrite your answers in the spaces provided. Working must **NOT** be done on this paper.

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

TOTAL MARKS for Section B

SECTION A [10 MARKS]

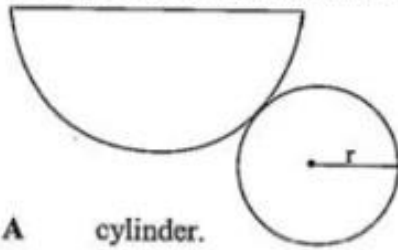
- 1 How many significant figures are in the number 0.007020?
- A 6
B 4
C 3
D 2
- 2 Find the value of $10 - (-3)$.
- A -13
B -7
C 7
D 13
- 3 Given that $p = 4$ and $q = -3$, find the value of $p - 2q$.
- A 10
B 2
C -2
D -10
- 4 Which of the following is an irrational number?
- A π
B $\sqrt{4}$
C 1.01
D $\frac{2}{5}$
- 5 The diagram below shows the XOY plane with a shaded region.



Which of the following inequalities describes the shaded region?

- A $x \geq 2$
B $x < 2$
C $y < 2$
D $y \geq 2$

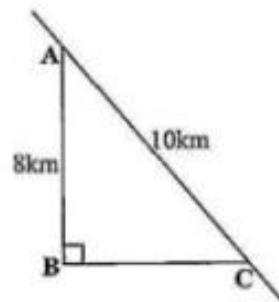
- 6 The figure below is a net of a ...



- A cylinder.
 B cone.
 C pyramid.
 D prism.
- 7 Mrs Fwenyafwenya invested K860.00 at a rate of 7% simple interest per annum. After how many years is the interest going to be K301.00?
- A 35 years
 B 7 years
 C 5 years
 D 4 years
- 8 Simplify $\frac{a^8 \times b^3}{a^3}$.
- A $a^{-5}b^3$
 B $a^{-1}b^3$
 C a^5b^3
 D a^6b^3
- 9 What is the order of matrix $D = \begin{pmatrix} 1 & 3 & 1 \\ 2 & 4 & 0 \end{pmatrix}$?
- A 5
 B 6
 C 3×2
 D 2×3
- 10 A footballer scored the following number of goals: 1, 0, 2, 2, 0, 4, 2, 3, 1, 2 in 10 matches. What was the median score?
- A 1
 B 2
 C 3
 D 4

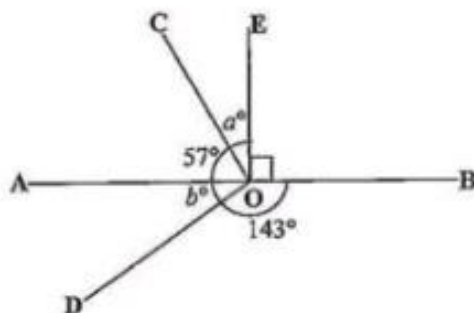
SECTION B [40 MARKS]

- 11 Find the value of y in the equation $3y - 20 = 7$.
- 12 Kalota Primary School budgeted for K16 200.00 to renovate the school. The school raised 25% and applied for the rest of the amount from a bank. How much did the school apply from the bank?
- 13 Convert 4.25 to a number in base 2.
- 14 The diagram below shows two straight roads AB and BC which join the main road at A and C. The road AB meets the road BC at right angles.



Given that $AB = 8\text{km}$ and $AC = 10\text{km}$, find the length of the road BC.

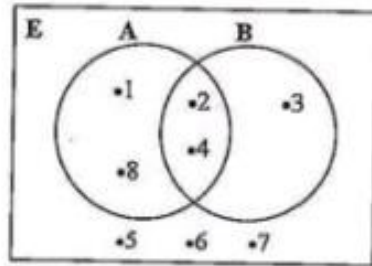
- 15 Evaluate $\sqrt{400}$.
- 16 Factorise completely $24x^2 + 72ax$.
- 17 The interior angle of a regular polygon is 108° . How many sides does this polygon have?
- 18 In the diagram below, AOB is a straight line, $\angle BOD = 143^\circ$, $\angle AOC = 57^\circ$ and $\angle BOE$ is a right angle.



Find the sum of a and b .

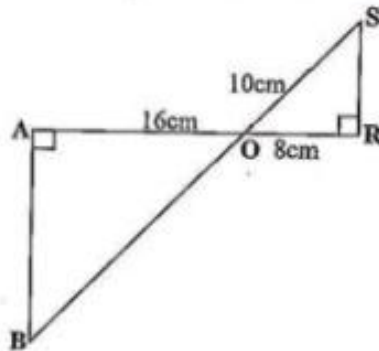
- 19 Mr Chiyaka bought 3 bicycles at K2 100.00 for his workers. How much would he need if he wanted to buy 7 bicycles of the same type?

- 20 The diagram below shows sets A and B.



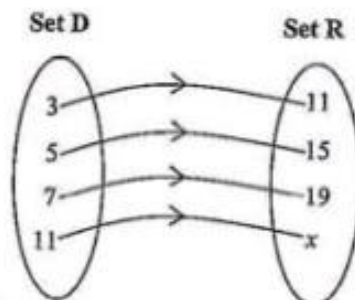
List the sets

- (a) $A \cup B$,
 (b) $A' \cap B'$.
- 21 A sofa can be bought for K8 400.00 cash. It can also be bought on hire purchase by paying a deposit of K3 000.00 plus 10 equal monthly instalments of K800.00. Chiongeni wants to buy this sofa on hire purchase. How much more will she pay on hire purchase?
- 22 The diagram below shows two similar right-angled triangles ORS and OAB. $OR = 8\text{cm}$, $OA = 16\text{cm}$ and $OS = 10\text{cm}$.



Calculate, in its lowest terms, the ratio

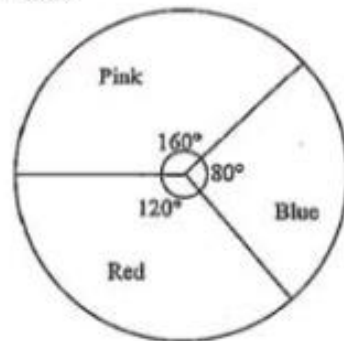
- (i) $OR : AR$,
 (ii) $RS : AB$.
- 23 The diagram below shows a mapping from set D to set R.



Find the value of x .

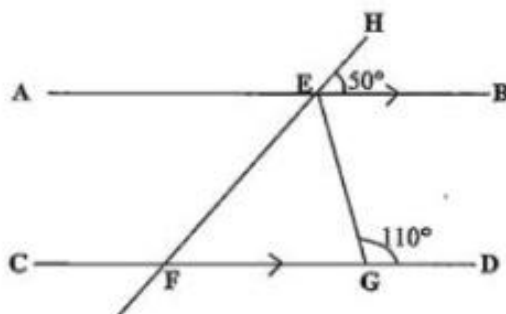
24 Given that $A = \begin{pmatrix} 12 & -8 \\ 4 & 20 \end{pmatrix}$, find $\frac{1}{4}A$.

- 25 The pie chart below shows colours that Grade 9 learners at Patapata Secondary School like.



If 40 learners like blue, find the total number of Grade 9 learners at this school.

- 26 An aircraft flies from A to B on a bearing of 120° . What bearing should it take to fly from B to A?
- 27 In the diagram below, AB is parallel to CD, angle HEB = 50° and angle EGD = 110° .



Find angle FEG.

- 28 Name one output device.
- 29 The mass of a sphere is 1.5kg. Find its volume if its density is 0.3g/cm^3 .
- 30 (a) Simplify $2t^2 - t + 3t^2 + 4t$.
- (b) How many faces has a triangular pyramid?

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