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**EXAMINATIONS COUNCIL OF ZAMBIA****JUNIOR SECONDARY SCHOOL LEAVING EXAMINATION (GRADE 9) – 2020****Mathematics 401/1
Paper 1**

(INTERNAL CANDIDATES)

**Time: 2 hours****Marks: 50****No Reading Time****Instructions to candidates**

- 1 Pull out the **inserted Answer Sheet** from the question paper.
- 2 Write your **examination number** and **school/centre name and code** 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	☒ 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.**



ANSWER SHEET FOR GRADE 9 MATHEMATICS PAPER 1 – 2020

Examination Number:

School/Centre Name:

School/Centre Code:

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 Mark for Section A

Section B

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

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

Total Mark for Section B

SECTION A [10 marks]

1 Which of the following is a rational number?

A $\sqrt{17}$

B $\sqrt{11}$

C $\sqrt{9}$

D $\sqrt{3}$

2 Round off 6.9960 correct to 2 decimal places.

A 7.90

B 7.00

C 6.99

D 6.90

3 Evaluate $(-3) - (-5)$.

A -8

B -2

C 2

D 15

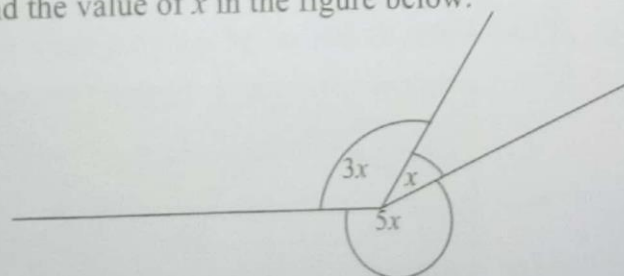
4 Find the value of $2^4 + (-3)^2$.

A 25

B 14

C 7

D 2

5 Find the value of x in the figure below.

A 30°

B 40°

C 45°

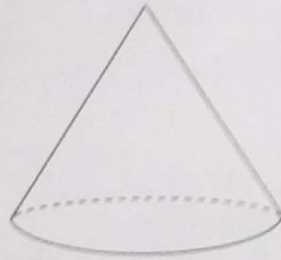
D 60°

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- 6 Five students scored the following marks in a Mathematics test: 40, 50, 10, 80, 80. What was the mean mark?

A 40
B 50
C 52
D 80

- 7 How many edges has the solid cone below?



A 1
B 2
C 3
D 4

- 8 Which of the following is an output device?

A Keyboard
B Mouse
C Microphone
D Speaker

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- 9 Given that $E = \{1, 2, 3, 4, 5, 6, 7, 8\}$, $A = \{2, 4, 5\}$ and $B = \{2, 4, 6, 7, 8\}$, list $A' \cap B$.

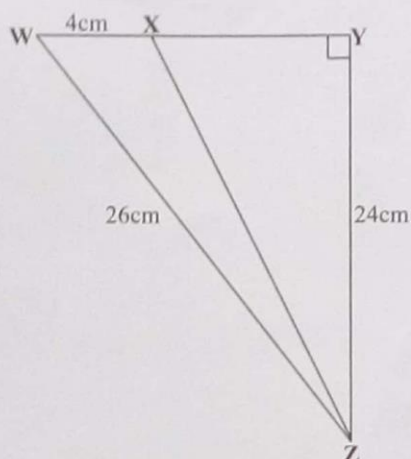
A $\{1, 3, 6, 7, 8\}$
B $\{1, 3, 5\}$
C $\{2, 4\}$
D $\{6, 7, 8\}$

- 10 Which one of the following is **not** a condition for congruency?

A Angle, Angle, Angle.
B Angle, Angle, Side.
C Side, Angle, Side.
D Side, Side, Side.

SECTION B [40 marks]

- 11 Factorise completely $6x^2 - 9xy^2$.
- 12 Solve the equation $2(a - 5) = 6$.
- 13 In the diagram below, **WXY** is a straight line. $YZ = 24$ cm, $WX = 4$ cm, $WZ = 26$ cm and angle $WYZ = 90^\circ$.



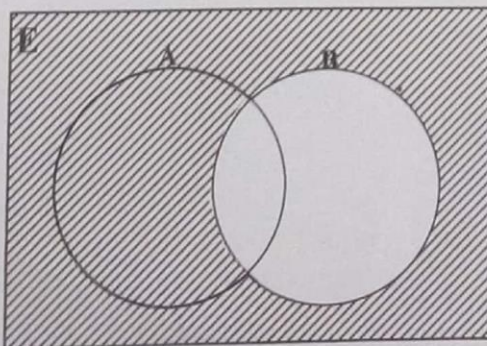
Calculate **XY**.

14 Given that $\mathbf{P} = \begin{pmatrix} -2 & 1 & 0 \\ 5 & 0 & -1 \end{pmatrix}$,

- (a) state the order of $\mathbf{P}$,
- (b) find $-2\mathbf{P}$.

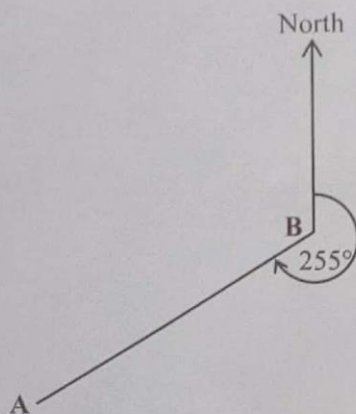
15 Simplify $5a - 4b + a - 3b$.

- 16 The Venn diagram below shows sets A and B.



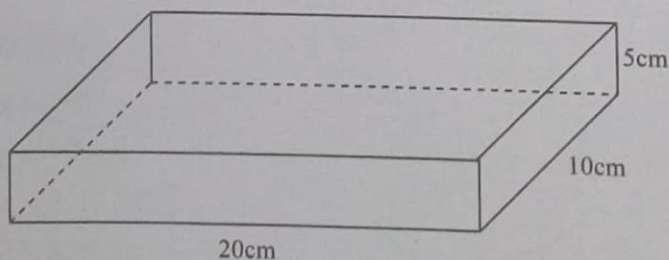
Use set notation to describe the shaded region.

- 17 Find the value of $\sqrt[3]{125} + \sqrt{16}$.
- 18 Ndalama invested K250.00 in the bank and earned an interest of K50.00 after 4 years. Calculate the annual interest rate.
- 19 In the diagram below, the bearing of A from B is 255° .



Find the bearing of B from A.

- 20 A regular polygon has an interior angle of 120° . Find the number of sides.
- 21 Convert 101.01_2 to base 10.
- 22 The diagram below shows a wooden rectangular block of length 20 cm, breadth 10 cm and height 5 cm.



Given that its density is 0.06 g/cm^3 , find its mass.

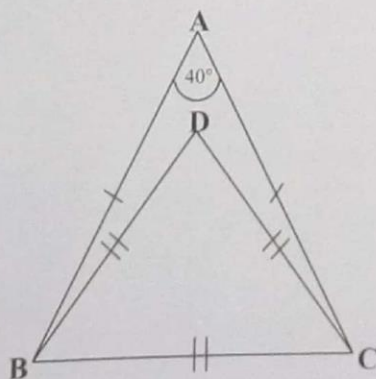
- 23 Given that $f(x) = \frac{2x+1}{3}$, find $f(-5)$.

- 24 The table below shows the marks scored in an Integrated Science test by learners in a Grade 9 class.

Marks	4	5	6	7	8	9	10
Number of learners	3	5	4	6	8	11	1

How many learners scored less than eight marks?

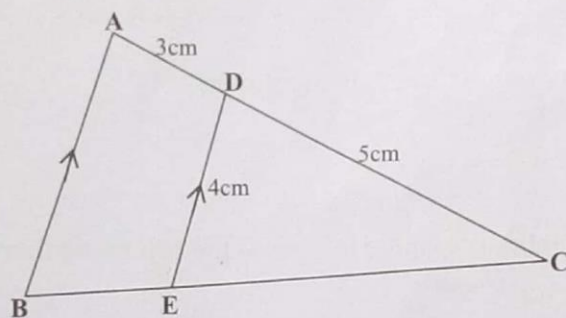
- 25 Solve the inequation $4 + 3x < 7$.
- 26 Chipasha had K150.00 to spend. He bought the following items:
 2kg of fish at K56.00,
 2kg of beans at K26.00,
 3 heads of cabbage at K4.00 each,
 2 packets of onion at K8.00 and
 1 bottle of cooking oil at K16.00.
- (a) How much did he spend altogether?
- (b) How much was his change?
- 27 In the diagram below, triangle **ABC** is isosceles and triangle **BCD** is equilateral. Angle **BAC** = 40° .



Find angle **ABD**.

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- 28 Given that $x = -3$ and $y = 2$, find the value of $xy - 2x$.
- 29 In the diagram below, **AB** is parallel to **DE**. **AD** = 3cm, **DC** = 5cm and **DE** = 4cm.



Calculate the ratio **DE** : **AB**.

- 30 How many triangular faces has a square pyramid?