KOLFRAM EDUCATIONAL SERVICES KAMPALA

PRE NATIONAL MOCK EXAMINATION 2024

SET TWO (BLUE PRINT)

MATHEMATICS

Time allowed: ***2*** *hours* ***30*** *minutes*

Index Number:

Random Number						Personal Number		

Candidate's Name: .....

Candidate's Signature: .....

School ID: .....

District ID: .....

DO NOT OPEN THIS BOOKLET UNLESS YOU ARE TOLD TO DO SO

Read and follow these instructions carefully:

1. This paper has **two** sections: **A** and **B**. Section **A** has **20** questions and section **B** has **12** questions. The paper has **10** printed pages.
2. Answer **all** questions. **All** answers to both sections A and B must be shown in the spaces provided.
3. All answers **must** be written using a **blue** or **black** ball point pen or ink. Any answer written in pencils other than on graphs and diagrams will **not** be marked.
4. No calculators or **electronic** pens are allowed in the examination room.
5. Unnecessary **changes** in your work and handwriting that cannot be read easily may lead to **loss of marks**.
6. Do not fill anything in the table indicated: "**FOR EXAMINERS' USE ONLY**" and boxes inside the question paper.

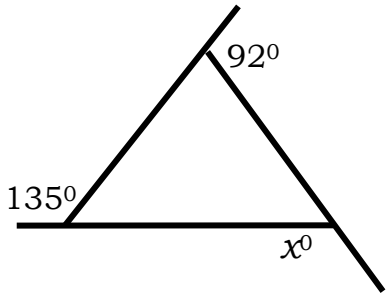
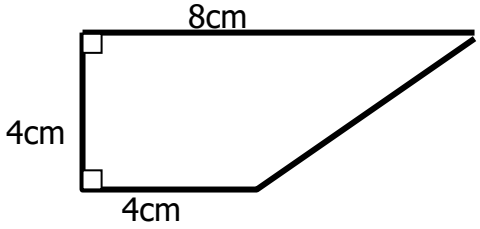
FOR EXAMINER'S USE ONLY

QN. NO.	MARKS	EX'ER'S INITIAL
1 -5		
6 - 10		
11 - 15		
16 - 20		
21 - 23		
24- 26		
27-29		
30- 32		
TOTAL		

Turn Over

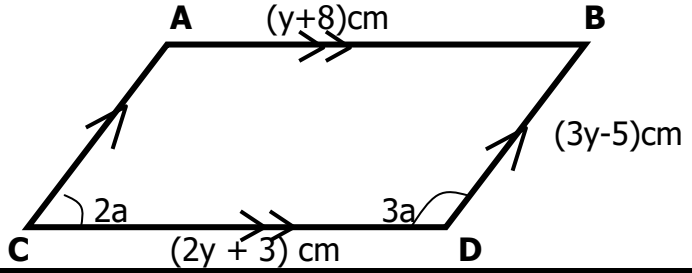
SECTION A: (40 MARKS)

1.	Work out: 6 8 + 2 6 _____	2.	Given that set A = {0, 1, 2, 3, 5, 7} and set B = {0, 4, 6, 7, 9} Find n(A∩B)
3.	Work out: $^{+}7 - ^{-}4$	4.	If 20% of a number is 80, what is the number?
5.	A baby slept at 8:35 a.m. If the baby slept for 2 hours and 45 minutes, at what time did the baby wake up?	6.	Work out: $1\frac{1}{12} - \frac{5}{6}$
7.	Divide: 6363 by 7	8.	Find the next number in the following number pattern: 1, 3, 6, 11, 18, _____
9.	Peter walked 0.15km. What distance did he cover in metres?	10	A cyclist covered 70km in 2 ½ hours. How long will he take to cover 21 km at the same speed?
11	Using a protractor, draw an angle of 45^0 in the space below.		

12	Maria has a bundle of five thousand shilling notes numbered consecutively from AP534201 to AP534300. How much money does she have?	13	Work out: $\frac{0.25 \times 5.4}{0.045}$
14	Given that a= 2b and b=3, Find the value of $\frac{a}{b}$	15	Town A and town B are 210km away. The difference between town B and C is 90km. How far is town C from town A via town B?
16.	In the figure below, BCD is a triangle Find the value of **x**. 		
17.	Arrange the following integers beginning with the smallest. 3, 0, -1, 8, -6	18.	Find the area of the trapezium below. 
19.	Primary Seven pupils will have a party next week. Find the probability that the party will take place on a day that starts with letter **T**.	20.	List all the integers which are members of the solution set x such that $8 \leq x < 12$

SECTION B: (60 MARKS)

21. Use the figure below to answer questions that follow.



(a) Find the value of a. ***(2 marks)***

(b) Find the size of angle BAC in degrees. ***(1 mark)***

(c) Work out the value of y. ***(2 marks)***

22. *At St. Paul Primary School, some pupils did a test and scored marks as shown in the table below.*

Marks	50	K	45	80
Number of pupils	2	6	3	4

(a) How many pupils did the test? ***(1 mark)***

(b) Find the value of **K** if the mean mark was 61. ***(2 marks)***

(c) What was the range of the marks? ***(1 mark)***

23. (a) Find the number which has been expanded below
$(1 \times 10^4) + (3 \times 10^2) + (6 \times 10^0)$ ***(1 mark)***

(b) Change 1011_{two} to base ten. ***(2 marks)***

(c) Find the value of x. 3 + 3 = x (finite 4) ***(2 marks)***

24. *The rates at which a bank buys and sells United States dollars and Kenya Shillings are given in the table below.*

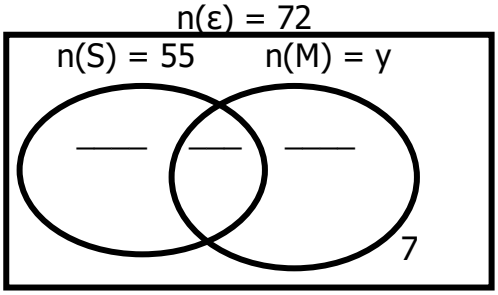
Currency	**Rate at which a bank buys**	**Rate at which a bank sells**
One U.S Dollar	Ug. Sh. 2800	Ug. Sh. 2900
One Kenya Shilling	Ug. Sh. 28	Ug. Sh. 30

(a) If a trader has 300 dollars and 500 Kenya shillings, how much money in Uganda shillings can he get from the bank? ***(3 marks)***

(b) Mark has Ug. Sh. 1, 160,000, how many U.S. dollars can he get from the bank? *(2 marks)*

25 *At a birthday party, 72 guests were invited. 55 were served with sodas (S), y were served with mineral water (M) while 7 did not take any of the two drinks and 17 were served with both drinks.*

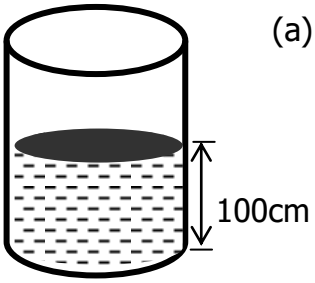
(a) Represent the above information on the Venn diagram. ***(3 marks)***



(b) Find the value of y. ***(2 marks)***

(c) How many guests were served with one drink only? ***(1 mark)***

26. ***The figure below is a cylindrical tank containing 1540 litres of water.***



(a) Find the radius of a tank.(use $\pi = \frac{22}{7}$)

(3 marks)

(b) If the tank is $\frac{4}{5}$ full, find its capacity.

(2 marks)

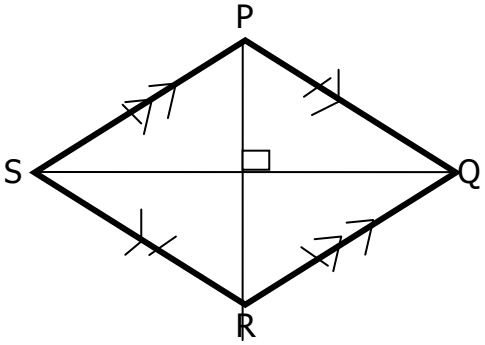
27 (a) Solve: $\frac{m + 2}{2} = \frac{4m - 4}{11}$

(2 marks)

(b) Annet is 20 years younger than Peter. In 15 years time, Peter will be twice as old as Annet. How old is Annet now? ***(3 marks)***

28. The diagram below is a rhombus PQRS. Its perimeter is 80cm. Diagonal SQ is 24cm long.

(a) Find the length of diagonal PR ***(3 marks)***



(b) Find area of the rhombus. ***(2 marks)***

29. The District Inspector of Schools of a certain district registered 4000 candidates for PLE – 2007. Out of these, 30% were girls below 15 years and 25% were boys below 15 years of age. If there were 1000 girls, who were above 15 years of age:-

(a) Find the number of girls who sat for PLE. ***(2 marks)***

(b) Find the number of boys who sat for PLE. ***(1 mark)***

(c) How many first grades did the district get if all the candidates below 15 years of age passed in division one? ***(2 marks)***

30 *The table below shows the arrival and departure time for Unity bus that travels from Kampala to Hoima daily.*

Town	Arrival time	Departure time
Kampala		7:30 a.m.
Busunju	8:10 a.m.	8:30 a.m.
Bukomero	9:30 a.m.	9:45 a.m.
Kiboga	10:15 a.m.	10:40 a.m.
Hoima	11:40 a.m.	

(a) At what time does the bus leave Kampala?

(b) How long does the bus stay at Bukomero? ***(1 mark)***

(c) How long does the bus take to travel from Bukomero to Kiboga? ***(1 mark)***

(d) Find the total time taken by the bus to travel from Kampala to Hoima. ***(2 marks)***

31. The bearing of town B from town A is 120^0 and town B is 4km from A. The bearing of town C from B is 060^0 and town C is 5km from B.

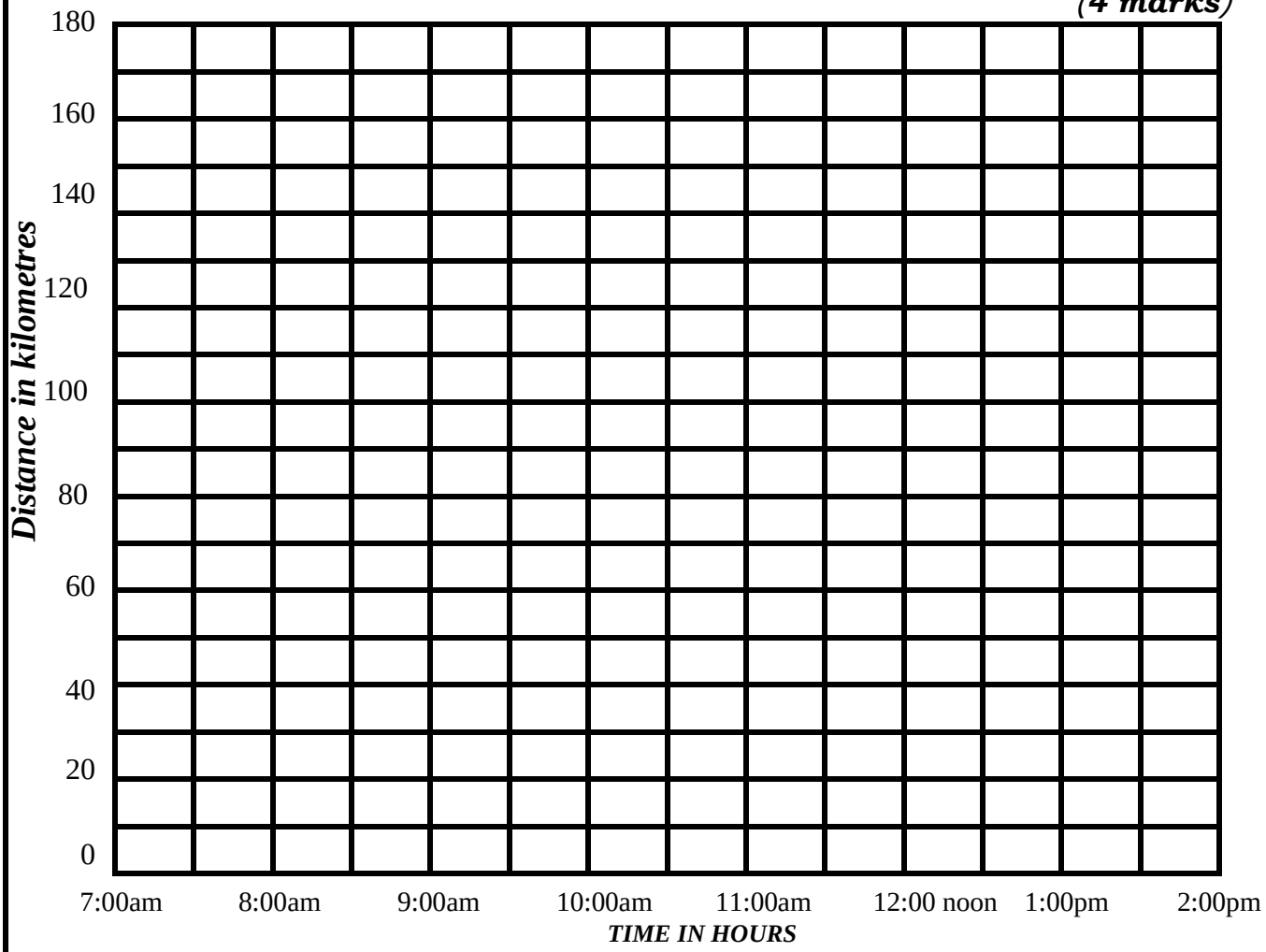
(a) Draw an accurate diagram showing the three towns. (Use scale: 1cm = 1km) ***(4 marks)***

(b) Find the shortest distance between town A and C in kilometers. ***(1 mark)***

32. *Atine left Kampala at 7:00 a.m. driving a lorry at an average speed of 40km/hr for 2 hours to Jinja. He rested for one hour at Jinja, then continued to Tororo at an average speed of 50km/hr for another 2 hours.*

(a) Use the above information to show Atine's journey on the graph below.

(4 marks)



(b) Calculate Ariko's average speed for the whole journey. (***1 mark***)