



FOCUS A365

Another Manyamfranchise.Com Evaluation Test

ADM

NAME

CLASS ...**FORM ONE**:

DATE: **MID-TERM EXAMS MATHEMATICS T3-2017**

SCHOOL ...**ST. CLARE GIRLS HIGH SCHOOL - GATITU...0735447269**

INSTRUCTIONS:

1. Write your **name, class and ADM number** in the spaces provided above.
2. Answer **all** the questions provided in **Section A** and any other **five** Questions in **Section B**
3. All workings must be **clearly shown**
4. Any acts of **cheating** will render your examinations nullified
5. For any queries, please liaise with the invigilator.

For examiner's use only

Question /Section	Section A	QN_13	QN_14	QN_15	QN_16	QN_17	QN_18	QN_19	Total
Max. Score	50	10	10	10	10	10	10	10	100
Candidate's Score									

TEACHER'S COMMENT

- 1.....
- 2.....
- 3.....

Section A: Answer ALL QUESTIONS in this section (50 marks)

1. List all prime numbers between 640 and 650 **=3 MKS**

2. Which of the following numbers are divisible by 9? **=2 MKS**

405,5346,8432

3. Perform the following operations;

a) $-\frac{2}{3} - (+\frac{1}{10}) + (\frac{1}{7})$ **=2 MKS**

b) $(-7) + (+2)$ **=1 MK**

c) $(-5) + (-5) + (-5)$ **=1 MK**

d) $(-15) + (+12)$ **=1 MK**

4. Three masses of sugar are grouped into 0.36 kg , 0.504 kg and 0.672 . find the greatest mass of sugar that can be taken an exact number of times from the three masses. Give your answer in kg .
=4 MKS
5. A number x is such that when it is divided by 27 , 30 or 45 , the remainder is 3 . Find the smallest possible value of n .
=4 MKS
6. Express $0.\dot{7}$ recurring as a fraction in its simplest form
=2 MKS
7. Workout using the factor method;
=5 MKS
$$\sqrt{4356} + \sqrt{1296}$$

8. Evaluate;

a) $\frac{1}{2}$ of $1\frac{5}{7} + 1\frac{1}{14} \div \frac{1}{2}$

=3 MKS

b) Solve for x ; $\frac{2x-5}{3} - \frac{3x-1}{4} = \frac{3}{2}$

=3 MKS

c) Evaluate **without** using mathematical tables or a calculator

=4 MKS

$$\sqrt{\frac{384.16 \times 0.0625}{96.04}}$$

9. Find the ratio $a : c$ if; $a : x = 3 : 1$, $x : 2 = 4 : 1$, $2 : c = 2 : 1$

=3 MKS

10. Evaluate **USING** mathematical tables

a) $\sqrt{5.38}$

=2 MKS

b) $\sqrt{0.0529}$

=2 MKS

c) 0.0195^2

=2 MKS

11. Solve the simultaneous equation using **substitution** method

=4 MKS

$$3x + 2y = 36$$

$$5x + 4y = 64$$

12. Correct the measurements below to the degree of accuracy indicated in the brackets

a) 0.03475 (3 *d.p*)

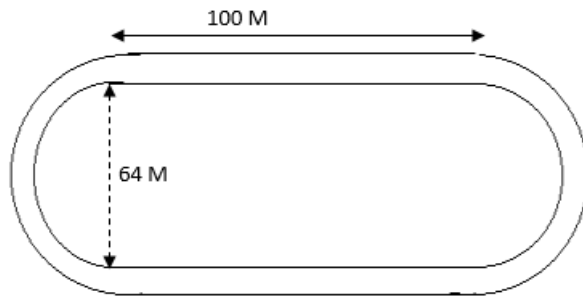
=1 MK

b) 314.0032 (2 *s.f*)

=1 MK

Section B: Answer ONLY FIVE QUESTIONS in this section (50 marks)

13. (a) The diagram shows a running track at a high school. It consists of two parallel lines segments with a semicircle at each end. The track is 10 m wide



- i. Ekrapa runs on the inside of the track. How far does he run in one lap?
=2 MKS
- ii. Sammy runs on the outer edge. How far does he run in one lap? =2 MKS
- iii. Find the difference between the distances run by Sammy and Ekrapa.
=2 MKS
- b) A two digit number is such that the sum of its digits is 12. If the digits are interchanged, the value of the new number formed is fifteen more than twice the value of the original number. Find the number;
=4 MKS

14. a). A metal m in form of a cuboid has a volume of 1080 cm^3 and a mass of 8 kg .
- i. Calculate the mass of one cubic centimetre of the metal in grams **=2 MKS**

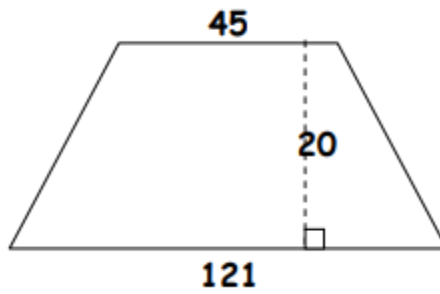
 - ii. The base of the cuboid measures 12cm by 10cm , calculate the height of the cuboid **=2 MKS**

 - iii. Calculate the density of the metal cuboid in g/cm^3 **=2 MKS**

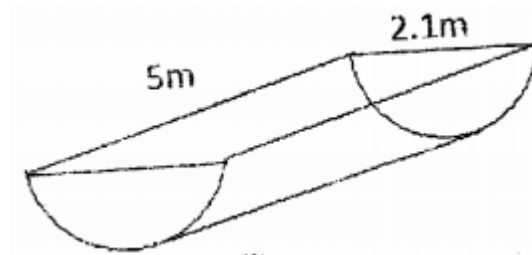
 - iv. If another metal n with the same mass as m and a density of $7.8 \text{ g}/\text{cm}^3$ is mixed to form an alloy p . What will be the density of alloy p ? **=4 MKS**

15.

- a) Find the area of the figure below and give your answer in square meters =3 MKS



- b) The diagram below represents a trough which is 5m long and its cross-section is a semi-circle whose diameter is 2.1m. Calculate the capacity in litres =5 MKS



- c) The mass of a cat and a rabbit is 10kg, a dog and a rabbit weigh 20kg, while a dog and a cat weigh 20kg. find the mass of all three pets =2 MKS

16. The table below shows the amount of money charged for hiring a laptop for a given time.

Time in minutes	10	20	30	40	50
Charges in Ksh.	75	100	125	150	175

- a) Draw a graph of charges against time played **=4 MKS**
- b) Use your graph to find the standing charge **=2 MKS**
- c) Using your graph, determine how much money is used on hiring the laptop for;
- i. 28 minutes **=1 MKS**

 - ii. 42 minutes **=1 MKS**
- d) The time it will take to hire the laptop if one pays;
- i. Ksh. 50 **=1 MKS**

 - ii. Ksh. 190 **=1 MKS**

17.

- a) Manu purchases the following items
- i. Books for Ksh. 50/-
 - ii. Textiles for Ksh. 300/-
 - iii. Food items for Ksh. 100/-
 - iv. Jewellery for Ksh. 700/-

Sales tax is calculated at 2% for books, 10% for textiles, 3% for food items and 15% for jewellery. Find the total amount paid. **=5 MKS**

- b) A Kenyan businessman bought goods from Japan worth 2,950,000 Japanese Yen. On arrival in Kenya, custom duty of 20% was charged on the value of the goods.

If the exchange rates were as follows:-

1 us dollar (\$) = 112 Japanese yen

1 us dollar (\$) = 103 Kenya shillings

Calculate the duty paid in Kenya shillings.

=3 MKS

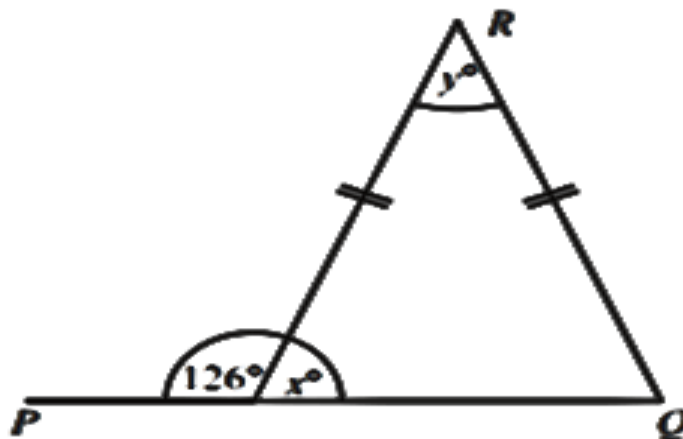
- c) The price of a book in U.S.A is \$4.25. Calculate in Kenyan Shillings what the book will cost in Kenya if it attracts a custom duty of 10% on arrival using the same exchange rates as in question 17(b) above.

=2 MKS

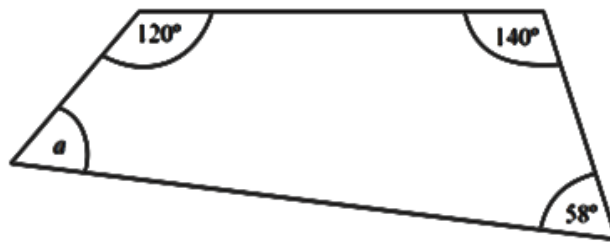
18. Find the size of angles marked with letters

a)

=2 MKS

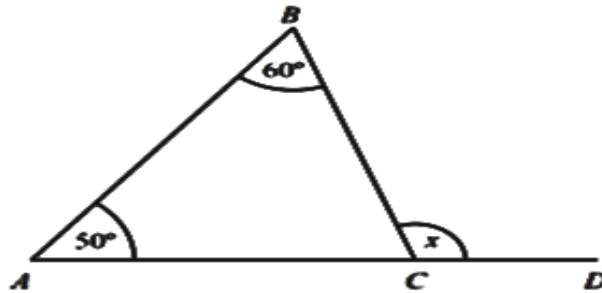


b)



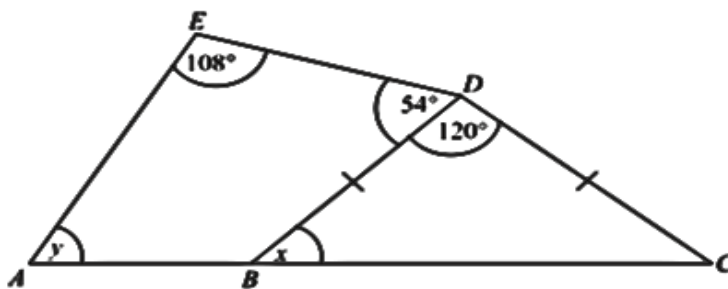
=1 MK

c)



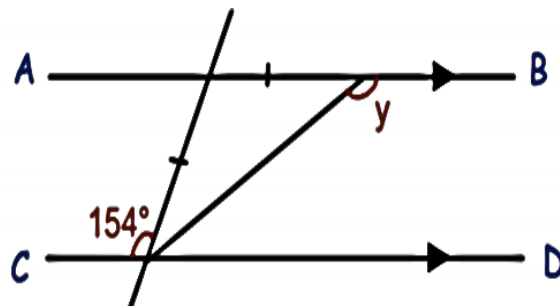
=1 MK

d)



=2 MKs

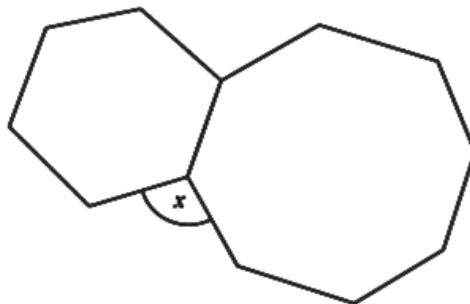
e)



=2 MKS

f) The diagram shows a regular hexagon and a regular octagon. Calculate the size of the angle marked x

=2 MKS



19. Using a ruler and a pair of compass only, Construct a triangle ABC such that $AB=6\text{cm}$,

$AC=5\text{cm}$ and $\angle ABC=45^\circ$ **=5 MKs**

a) Measure line BC **=1 MKs**

b) Draw a circle whose arc passes through the vertices A, B and C **=3 MKs**

c) Measure the radius of the circle **=1 MK**