

FOCUS A365

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ADM

NAME

CLASS FORM 2

DATE

SCHOOLST. CLARE GIRLS SECONDARY SCHOOL - GATITU

KCSE | OPENER EXAMS | MATHEMATICS | TERM 1 | 2018

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<u>CANDIDATE'S SCORE</u>	<u>MAXIMUM SCORE</u>
	80

Teacher's Comment

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Instructions:

1. Write your **name, class and ADM number** in the spaces provided above.
2. Answer **all** the questions provided in **this booklet**
3. All workings must be **clearly shown** on the question paper provided
4. Any acts of **cheating** will render your examinations nullified
5. For any queries, please confirm with the invigilator.

This paper takes strictly 2 hours

Answer All Questions in This Booklet (80 Marks)

1 Solve for x in the following equation **3 mks**

$$\frac{x-1}{3} - \frac{x-2}{4} = 0$$

2 Work out the following leaving your answer as a fraction in its simplest form **3 mks**

$$\frac{2\frac{1}{2} \div 3\frac{1}{3} \text{ of } \frac{21}{40} - 1\frac{1}{3}}{\frac{1}{12} - 2\frac{2}{3} \times 1\frac{1}{4}}$$

3 Simplify: $10a - 8b - 4(4b + c)$ **2 mks**

4 Evaluate: **3 mks**

$$\frac{-8 + 2 + 12 \times 9 - 4 \times 6}{56 + 7 \times 2}$$

5 Given that $a = 3, b = -1$ and $C = 2$. Evaluate in simplest form. **3 mks**

$$\frac{a - b^2}{4 - 2b + c}$$

6 Express as a simple fraction **2 mks**

$$\frac{3}{4} - \frac{5 \times -2}{12}$$

7 Evaluate: **3 mks**

$$\frac{3}{4} + \frac{1}{2} \text{ of } \frac{6}{8} - \frac{5}{18} \div \frac{1}{3}$$

8 Solve the equation: **3 mks**

$$\frac{x+1}{2} - \frac{x-3}{3} = 4$$

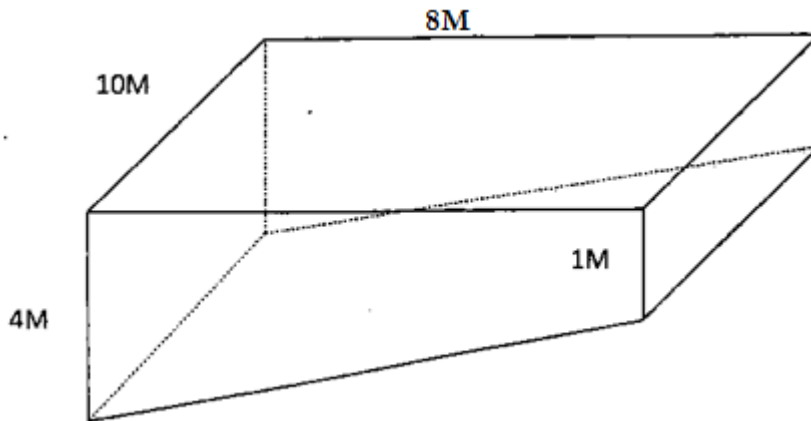
9 Evaluate: **3 mks**

$$\frac{\frac{1}{2} \text{ of } 3\frac{1}{2} + 1\frac{1}{2} (2\frac{1}{2} - \frac{2}{3})}{\frac{3}{4} \text{ of } 2\frac{1}{2} \div \frac{1}{2}}$$

- 10 Simplify the expression:
$$\frac{16x + 24y}{3y + 2x}$$
 2 mks
- 11 The density of a substance A is given as 13.6 g/cm^3 and that of substance B as 11.3 g/cm^3 . Determine, correct to one decimal place, the volume of B that would have same mass as 50cm^3 of A. **3 mks**
- 12 a) If $a:b = 2:3$ and $b:c = 4:5$, find the ratio $a:b:c$. **2 mks**
- b) All prime numbers less than ten are arranged in descending order to form a number. **1 mk**
- i. Write down the number formed

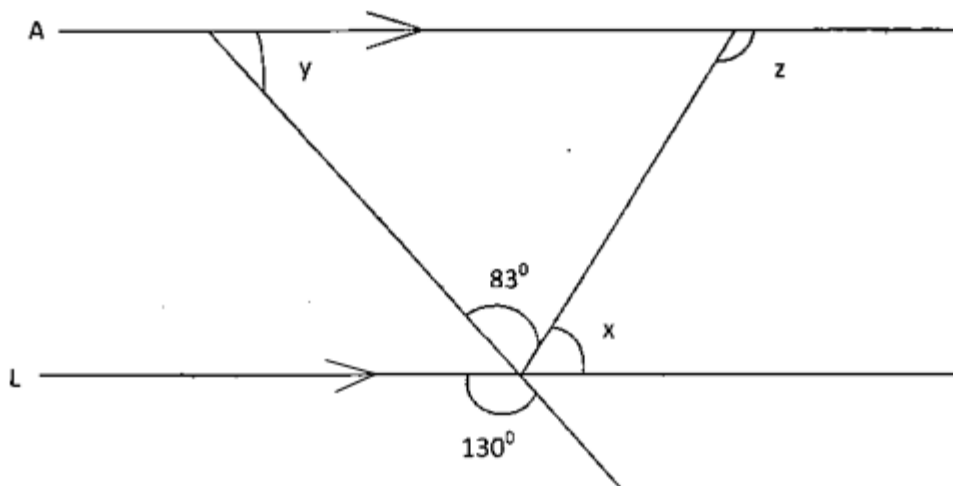
- ii. State the total value of the first digit in the number formed in (i) above. **1 mk**
- c) 14 people take 24 hours to pack 560 cartons. How many hours will 20 people take to pack 750 such cartons if they work at the same rate? **3 mks**

- 13 The figure below shows a swimming pool. Find the capacity of the swimming pool in litres **4 mks**



14 Find the values of the angles marked x , y and z .

3 mks



15 A carpenter had three pieces of timber of lengths 40 cm, 56cm and 64cm. He cut the timber into smaller pieces of equal length.
Calculate:

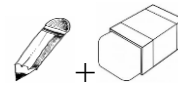
a) The greatest possible length of each piece that the carpenter cut. **2 mks**

b) The total number of pieces of timber obtained. **2 mks**

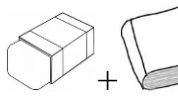
16




$$= 24$$



$$= 20$$



$$= 10$$



$$=$$

3 mks

- 17 a) A motorist took $2\frac{3}{4}$ hours to travel from town A to town B. if he started the journey at 10.30am, determine the time the journey ended in 24 hour clock system.

3 mks

- b) Solve the pair of simultaneous equation

$$4y - 3x = 2$$

$$2y + 1 = 2x$$

3 mks

- c) A bicycle wheel has a diameter of 65cm. During a journey the wheel makes 1000 complete revolutions. How many metres does the bicycle travel? (Take $\pi = 3.142$) **3 mks**

- 18 a) Work out: **2 mks**
i. $-5 \times -2 \times -4$

ii. $-36 \div -9$

- b) The diameter of a cylindrical container closed at one end is 280cm. If its height is 140cm, find its
i. Surface area. **3 mks**

ii. Volume

2 mks

c) A man received sh.3200 which was 10% commission of goods he sold after giving the buyers a discount of 5%.

i. What were his total sales?

2 mks

ii. How much commission would he have gotten if he gave no discount?

2 mks

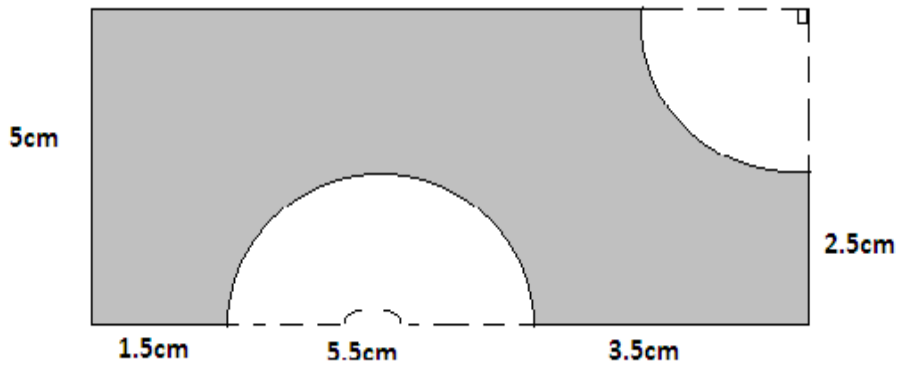
d) Use the exchange rates below to answer this question.

	Buying	Selling
1 US dollar	63.00	63.20
1 UK £	125.30	125.95

3 mks

A tourist arriving in Kenya from Britain had 9600 UK Sterling pounds (£). He converted the pounds to Kenya shillings at a commission of 5%. While in Kenya, he spent $\frac{3}{4}$ of this money. He changed the balance to US dollars after his stay. If he was not charged any commission for this last transaction, calculate to the nearest US dollars, the amount he received.

19 Study the diagram below carefully and answer questions that follows
(Note use π as 3.142)



a) Find the area of the shade part

4 mks

b) Find the perimeter all-round the figure

2 mks