Name: ………………………….…………………………… **Index no** ……..….................................

School: ……………..……………………………......…. **Candidate's sign** ……………………...

Date: ………………….………………………………………

121/1
MATHEMATICS
PAPER 1
JULY/AUGUST 2011
TIME: 2½ HOURS

NDHIWA DISTRICT JOINT EVALUATION TEST

Kenya Certificate of Secondary Education (K.C.S.E.)

Mathematics
Paper 1

INSTRUCTIONS TO CANDIDATES:

- *Write your **name**, **index number** , **Signature** and write **date** of examination in the spaces provided*
- *The paper contains **two** sections. Section I and Section II.*
- *Answer **ALL** the questions in section I and any **five** questions in section II.*
- *Answers and working **must** be written on the question paper in the spaces provided below each question.*
- *Show all steps in your calculations below each question.*
- *Marks may be given for correct working even if the answer is wrong.*
- *Non programmable silent electronic calculators and KNEC mathematical table may be used, except where stated otherwise.*

FOR EXAMINERS USE ONLY

SECTION 1

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	**TOTAL**
Marks																	

SECTION II

Question	17	18	19	20	21	22	23	24	**TOTAL**
Marks									

Grand Total

This paper consists of 11 printed pages. Candidates should check to ascertain that all papers are printed as indicated and that no questions are missing

© Ndhiwa – 2011   *Form Four*   1   *Mathematics 121/1*

1. Find the value of a and b in. (3mks)

$$\frac{13}{4} = \frac{Q}{1.6} = \frac{-0.65}{6}$$

2. A Kenyan bank buys and sells foreign currencies as shown below.

	Buying in Kshs	Selling in Kshs
1. Hongkon Dollar	9.74	9.77
1 South African rand	12.03	12.11

A tourist arrived in Kenya with 105,000 Hongkong Dollars and changed the whole amount of Kenya shillings. While in Kenya he spent Kshs. While in Kenya he spent kshs. 403,879 and changed the balance to South African Rand before leaving for South Africa. Calculate that he received. (2mks)

3. A mallar And Ligawa bought the same types of pens and exercise books from the same shop. Amallar bought 2 pens and 3 exercise books and paids 78. Ligawa bought 3 pens and 4 exercise books paid sh. 108. calculate the cost of each pen and each exercise book. (3mks)

4. During a methamatical experiment it was deviced that Tan $144^o = 1-\sqrt{3}$ determine the value of 54o from this results leaving your answer in the form $\frac{a+\sqrt{c}}{b}$ where a, b and c are integers. (4mks)

B

5. Three traders Moses, Daniel and Thomas shatred a profit of sh. 620,000 Moses got 3 ½ times as much as Thomas. Find the amount of money each got. (3mks)

6. Judy needs to buy clothes cpsting sh. 324 each while Nyamboga needs to buy clothes costing shs. 220 each. Their father woulf like to give them equal amounts of money.

(a) What is the least amount of money that he can send to each of them so that the money is fully utilized, on clothes without remainder. (2mks)
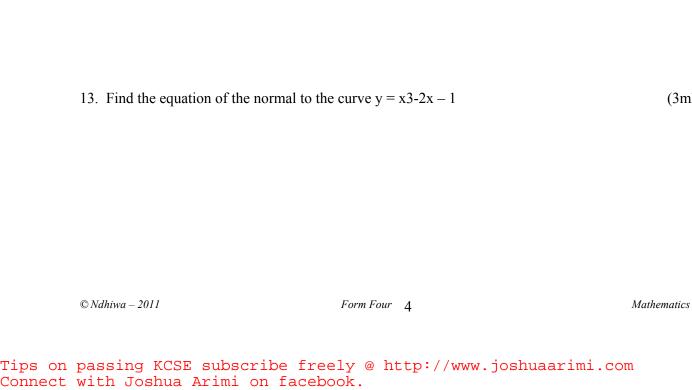
(b) How many clothes will each buy? (1mk)

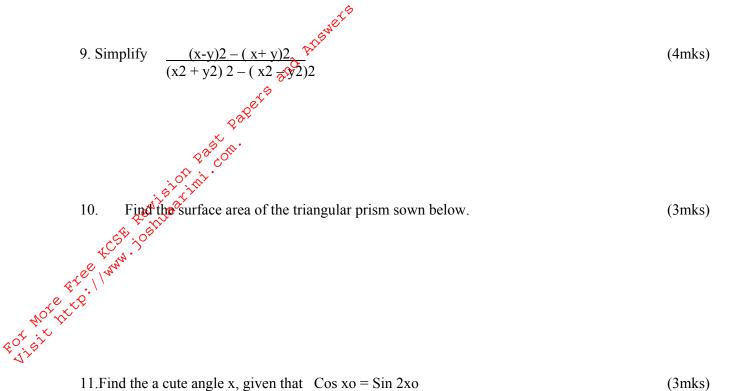7. Find integral values stasisfying x the following inequalities.
$2x + 3 \geq 5x-3 > -1$ (3mks)

8. The interior angle of regular polygon is 20o more than three times the exterior angle.
Find the number of sides of the polygon. (3mks)

9. Simplify $\dfrac{(x-y)2 - (x+y)2}{(x2+y2)2 - (x2-y2)2}$ (4mks)

10. Find the surface area of the triangular prism sown below. (3mks)

11. Find the a cute angle x, given that Cos xo = Sin 2xo (3mks)

12. Tap A can fill a tank in 10 minutes, tap can fill the same in 30 minutes, the three taps are left open for 5 minutes, after which tap A is closed, how long does it take to fill the tank. (3mks)

13. Find the equation of the normal to the curve $y = x3-2x - 1$ (3mks)

14. The ration of boys to girls in ratanga mixed secondary school is 4:5one day 1/3 of the boys and 1/5 of the girls were absent, ¾ of the 8 less pupils had been absent. Calculate the number of pupils in Ratanga on that day. (3mks)

15. Determine the equation of the mirror line given that a point Q (-2,4) is mapped onto Q1(4,2) after a reflection. (3mks)

16. A line segement Ab+4cm long, construct the locus of a point P on the upper side of AB such that ∠APB = 60o (4mks)

SECTION II

17. The figure below shows two circles with centres at P and Q and radii 8cm and 6 cm with centres P and Q respectively. The circles intersect at point A and B.

Diagram

Calculate

(a) The length of the common chord AB.   (3mks)

(b) $\angle$ APB and $\angle$ AQB   (3mks)

(c) the are of the sahded part.   (4mks)

18. A lorry left town A at 8.30am for town B aat an average speed of 70 km/hr. A matatu left town B at 9.00 am for town A at an average speed of 80km/hr. the towns are 180km apart.

(a) Calcualte the distance from town A when