**ELERAI MCK GIRLS SECONDARY SCHOOL**

**OPENER CAT I TERM III 2014**

**FORM 2 MATHEMATICS**

1. Evaluate without using mathematical table or a calculator. (4mks)
2. Makari and Omote bought the same types of pens and exercise books from the same shop. Makari bought 2 pens and 3 exercise books and paid sh.78. Omote bought 3 pens and 4 exercise books and paid sh. 108. Calculate the cost of each pen and each exercise book? (4mks)
3. The interior angle of a regular polygon is 200 more than three times the interior angle. Find the number of side of the polygon (3mks)
4. Solve the following inequalities and represent the solution on a single line (4mks)

3 – 2x > -3

4 + 3x > -8 –x

1. The equation of a line is given by

Find

1. The gradient of the line (2mks)
2. The equation of a line passing through (1,2) and perpendicular to the given line. (2mks)
3. The volume of a cylindrical tank is 343 cm3 and the volume of a similar tank 172 800cm3. Calculate the surface area of the larger tank if the surface area of smaller tank is 1680cm2 (3mks)
4. If cos Q =

 find without using tables (3mks)

1. Sin Q
2. Tan Ѳ
3. Sin (90 –Ѳ)
4. A dealer in electric equipment made a loss of 30% by selling an electric wire at sh.700. What profit would have been made if he sold it at sh.1150. (3mks)
5. Without using mathematical table evaluate (3mks)
6. Factorise (2mks)
7. Use reciprocal and square table evaluate (3mks)
8. A kite PQRS has vertices P(2,2) Q(7,3) R(7,7) and S(3,7) on the same axis (2mks)
9. Draw the image P’Q’R’S’ under reflection y=0 (2mks)
10. Draw the image P’’Q’’R’’S’’ under reflection Y=X (2mks)
11. Find the area of the shaded region in the figure below <PAQ = 600<PBQ=800
12. Calculate the length PQ (2mks)
13. The area of the shaded region (6mks)

S

1. Ii) The area of the shaded region (6mks)

14.The class in asecondary school had the following number of pupils 50 in number

54 59 60 28 60 14 16 33 43

35 38 45 58 72 36 62 15 61

47 55 60 34 40 25 30 18 75

48 52 58 83 30 92 80 32 18

55 56 70 38 25 46 64 53 65

a) using class interval of 10, i.e. 10 -19, 20 -29, etc

Make a frequency distribution table (4mks)

b) Calculate

i) Mean (3mks)

ii) Mode (1mk)

iii) Median (2mks)

15.a)find values of angles marked with letter (3mks)

b)calculate <LNP if <PLM is 700 and <KNL = 420 (3mks)

c)given that O is the centre of the circle. The reflex angle AOD =2560 and <ACE = 500.

Calculate (4mks)

1. BDC

 b)BAE

16. a truck left Nyeri at 6:00am for Nairobi at an average speed of 60km/h at 8:00am a bus . another bus left Nairobi for Nyeri at average speed of 120km/h. How far from nyeri did the vehicle meet if Nyeri is 200 km from Nairobi (6mks)

b) how long will it take a car 8m long moving at 100km/h to overtake a track 20m long moving at 50km/h , if the car is 30m behind the truck (4mks)