HEIGHTS SECONDARY SCHOOL –THIKA
END OF YEAR EXAMINATION 2016
FORM TWO MATHEMATICS
21/2hrs

NAME…………………………………………………………………………………………….

ADMISSION NO…………………DATE……/……/……..SIGNATURE………………..

ANSWER ALL THE QUESTIONS IN THE SPACES PROVIDED

SECTION A (70MKS)

1. **Evaluate**
   $48 \div 3/4 of (25 \quad 9) + 3 \times 4$ **(2mks)**

2. **Convert into a fraction**
   2.83 **(3mks)**

3. **Solve for x in the equation**
   $\frac{x+3}{2} - \frac{x-4}{3} = 4$ **(3mks)**

4. **Use the reciprocal tables to find**
   $\frac{4}{0.37\ 5} - \frac{5}{37.5}$ **(3mks)**

5. **The GCD of three numbers is 30 and LCM is 900. The two of the numbers are 60 and 150. What is the other number** (3mks)

6. **Find the equation of the line through the point and parallel to the given line**
   $(3, 5); 7y=3x+0$ (3mks)

7. **The figure below shows a trapezium ABCD in which AB is parallel to CD. Calculate the area of the trapezium.** (3mks)

8. **72 hectares farm is shared among three sons in the ratio of 2:3:4. What will be the size in hectares of the three shares?** (3mks)

9. **Use the logarithm tables to solve the following**

   $$\sqrt[2]{\left(\frac{486\ 2\times 7\ 25}{6\ 43\times 1\ 024}\right)}$$ (3mks)

10. Musa spent sh. 207 to buy 7 books and 4 pens, while Jane spent sh.165 to buy 5 books and 5 pens of the same kind. Find the coast of each item   (3mks)

11. Use factorization method to solve for x
    $2x^2+3x-20=0$ (3mks)

12. Solve for the following
    $27^x+3^{3x+1}=108$ (3mks)

13. A block of wood has a mass of 1.8kg and a volume of 1500cm^3. Calculate its density in g/cm^3
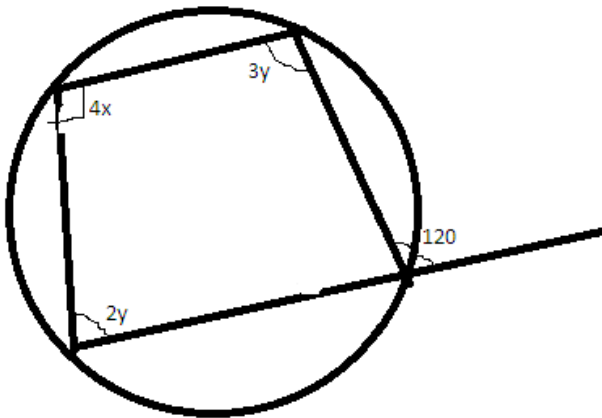   (3mks)

14. Calculate the volume of the sphere that has been cut in to two halves and has a radius of 6.3cm
    (3mks)

15. Find the value of x and y in the following **(4mks)**

16. The size of an interior angle of a regular polygon is 156^0. Find the number of sides of the polygon (3mks)

17. An article which was marked for sh. 12000 was sold to a customer for sh.1050. calculate percentage discount given **(3mks)**

18. The ratio of boys to girls in a class is 3:5. The total number of students in that class is 48. How many girls are in the class **(3mks)**

19. The surface area of two similar solid cylinders is 848cm^2 and 1908cm^2 respectively. Given that the volume of the largest cylinder is 4077cm^3 calculate the volume of the smaller cylinder **(3mks)**

20. Solve the following pair of inequalities and represent the solution in a single number line
3x-11$\leq$ 4
2x+3>5 **(4mks)**

21. An aero plane leaves an airport and flies on a bearing of 060^0.after travelling for 80km , it alters its course to a bearing of 140^0 and flies on this course for 100 km.
using a scale of 1cm rep 20km
(a) draw the locations **(2mks)**
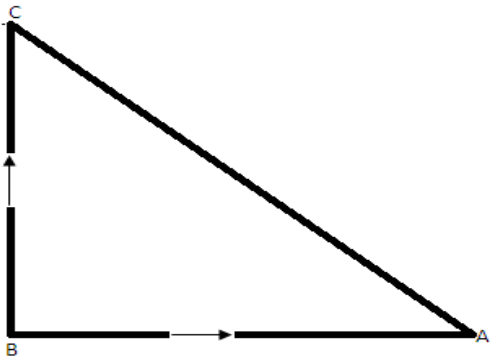(b) find the distance of the aero plane from the airport **(2mks)**
(c)find the bearing from the airport **(2mk)**

22. Find the vector of AC in the figure below (3mks)

23. the following frequency distribution table represents masses in kgs of children in a class

mass kg		35.5	36.8	38.2	40	40.2	41	41.8
no. of children		4	3	2	2	2	14	8

Prepare a table of distribution (2mks)
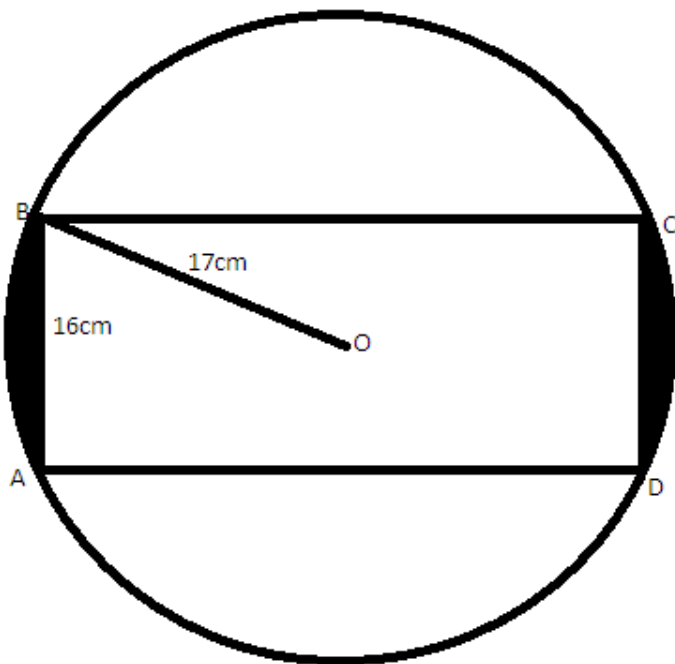
Find

(i) modal class (1mks)

(ii) the mean (3mks)

(iii)median (4mks)

24. The figure below represents rectangle ABCD inscribed in a circle O. Given that the radius OB=17cm and AB=16cm

calculate

(a) the length BC of the rectangle (3mks)

(b) the angle COD (3mks)

(c) The area of the shaded region (4mks)

25. A fabric is required to make a lampshade in the shape of a frustum whose top and bottom diameter is 20cm and 30 cm respectively. And the height 12cm

find

(a) the surface area of the fabric material required   (5mks)

(b) the volume of the fabric material required   (5mks)