**NAME..................................................................................ADM NO..................... STRM...................**

**ELERAI MCK GIRLS’ SECONDARY SCHOOL**

**P. O. BOX 435**

**SULTAN HAMUD**

***Motto “Discipline and Hard Work for Excellence”***

**FORM II**

**MATHEMATICS**

**CAT I**

**TERM III 2013**

**INSTRUCTION**

* *Answer* ***ALL*** *the questions in the spaces provided below each question*
1. Evaluate (3mks)

a)

 b) aa – ba

 bb x aa if a =2 and b = -2 (2mks)

1. Give that log y3 = log$∛$81, find y correct to 3 significant figures. (2mks)
2. The volume of a sphere is given by v = 4$П$r3. Find the value of r if v = 311 and $П $= 3.14. (2mks)

 3

1. The corresponding lengths of two similar photographs are 12 cm and 30 cm. The area of the larger photograph is 750 cm2. Find:
2. The area scale factor (2mks)
3. The area of the smaller photograph (2mks)
4. Sophie has two balloons, one yellow and the other green. The radius of the yellow balloon is 7 cm while that of the green balloon is 21 cm. find the ratio of their surface areas. (2mks)
5. What is the height of an equilateral triangle if one of its sides is 10 cm long? (2mks)
6. A tree casts a shadow 20 m long. Find the height of the tree if the angle of elevation of the top of the tree from the tip of the shadow is 310. (2mks)
7. An aircraft flying into an airport calls out the control tower and says it is at height of 500 m above the tower. If its horizontal distance from the tower is 8 km, calculate its angle of elevation from the top of the tower. (2mks)
8. In figure 1 below, AB = 16 cm and AC = 20 cm. Find:







1. Sin ϴ (2mks)
2. Cos ϴ (2mks)
3. Simplify the following without using tables (use trigonometric ratios);
4. 4cos450sin600 (2mks)
5. 3cos300 + cos600 (2mks)
6. An isosceles triangle is such that AB =AC = 8 cm. If the perpendicular distance from A to BC is 6 cm, find:
7. The length of BC (2mks)
8. Angle BAC (2mks)
9. Evaluate 7cos50.20

 9.5sin600 (2mks)

1. In a triangle PQR, PQR = PRQ = 580 and QR = 5.2 cm. Calculate the length of PQ. (2mks)
2. A triangle has sides 10 cm, 7 cm and 9 cm. Find:
3. Its area (2mks)
4. The sizes of its angles (2mks)
5. The figure below is a trapezium in which PS//QR, PS = 15 cm, QR = 20 cm, RS = 8 cm and QRS = 350. Calculate the area of the trapezium. (3mks)



1. ABCD is a parallelogram of area 120 cm2. Its base is 10 cm and ABC = 300. Find the length of the other side of the parallelogram (2mks)
2. Find the area of a regular hexagon of side 4.8 cm. (2mks)
3. The shaded region in the figure below shows the area swept out on a flat windscreen by a wiper. Calculate the area of this region. (2mks)

