**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 II**

**TERM II 2013**

**INSTRUCTION**

* *Answer* ***ALL*** *the questions in the spaces provided below each question*

1. Find the equation of the line whose gradient is ½ and y-intercept is -3 (2mks)
2. Solve for x in
3. 22x+1 = 83 (2mks)
4. (92x)3 = 81 (2mks)
5. Log381 = x (2mks)
6. The angle between an image line and its object is 800. Draw a diagram to show the position of the mirror line (3mks)
7. In figure below, AB = AD, BC=CD. Show that Δs ABC and ACD are congruent (3mks)
8. The figure below shows a triangle PQR in which PQ = 3cm, QR = 4cm and PR = 5cm. use the figure to locate ΔP´Q´R´, the image of ΔPQR, under a rotation of 650 about O (4mks)
9. Given that the triangles ABC and PQR in the figure below are similar, find:
10. The size of angle QPR (2mks)
11. The length of RQ and PR (4mks)
12. In the figure below, rectangles ABCD and PQRS are similar. Find the area of PQRS (3mks)
13. In the figure below, the radii of the circle with centre P and Q are 5cm and 10cm respectively. If OA = 10cm, calculate
14. OB (2mks)
15. AB (2mks)
16. PQ (2mks)
17. The width of a rectangle is 10cm and its area is 120cm2. Calculate the width of a similar rectangle whose area is 480cm2 (3mks)
18. The ratio of the radii of two spheres is 2:3. Calculate the volume of the first sphere if the volume of the second is 20cm3 (2mks)
19. A ladder 20 metres long leans against a building and reaches a point on the building that is 14 metres above the ground. How far from the bottom of the building is the foot of the ladder? (3mks)
20. Find the length of the diagonal of a square of side 4cm (2mks)

**USE GRAPH PAPER PROVIDED FROM THIS SECTION**

1. A(-4,1), B(-2,-1), C(1,0) are the vertices of a triangle. Find the image of the triangle when it is reflected in the mirror line x = -3 (3mks)
2. A negative quarter turn about the point (0, -1) maps ΔABC onto ΔA´B´C´ with the vertices A´(3,1), B´(0,5) and C´(0,1), find the vertices of ΔABC (4mks)