**NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ADM/NO\_\_\_\_\_\_\_\_\_\_\_**

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**MATHEMATICS**

**FORM 2**

**TERM TWO 2017**

**TIME: 2 HOURS**

**HOLA SECONDARY SCHOOL**

**MID TERM EXAMINATIONS**

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**INSTRUCTION: ATTEMPT ALL THE QUESTIONS IN THIS PAPER**

1. Use logarithms to evaluate; correct to 4 significant figures: (4mks)

$$\sqrt{\begin{array}{c}72.56 x 0.64\\(1.845)\end{array}}$$

2. A straight line passes through points A(-3,8) and B(3, -4). Find the equation of the straight line through (3,4) and parallel to AB. Give your answer in the from y = mx + c. (3mks)

3. Solve the equation X – 1 - X - 3 = 4

 2 3

4. A fruit juice dealer the juice in packets of 300ml, 500ml and 750ml. Find the size of the smallest container that can fill each of the packets and leave a remainder of 200ml. (3mks)

5. The length of an arc of a circle is 1/5 of its circumference. If the area of the circle is 346.5cm2, find:

a) the angle subtended by the arc at the centre of the circle. (3mks)

b) the area of the sector enclosed. (1 mk)

6. Use reciprocal tables to evaluate. (4mks)

 5 + 10

0.6735 0.156

7. The sum of the interior angles of a regular polygon is 1080o.

a) Find the size of each exterior angle. (2mks)

b) Name the polygon (1mk)

8. Solve for X in the equation. (3mks)

812x x 27x = 729

 9x

9. It takes 30 workers 6 days working 8 hours a day to harvest maize in a farm. How many days would 50 workers working 6 hours a day take to harvest the maize? (3mks)

10. Evaluate without using a calculator or tables:

0.036 x 0.0049

0.07 x 0.048 (3mks)

11. A Kenyan businesswoman owes US$ 1,000,000 to a company in the United States of America. The Kenyan can either pay through her account in Kenya or through her account in the United Kingdom which method is cheaper and by how much. Give your answer in Kenya shillings given that: (4mks)

1Us dollar = Kshs. 28.74

1 Sterling pound = Us dollar 1.79

1Sterling pound = Kshs. 50.80.

12. Abdi sold a radio costing Kshs. 3,800 at a profit of 20%. He earned a commission of

 22 ½ % on the profit. Find the amount he earned. (3mks)

13. A line L passes through points (-2,3) and (-1,6) and is perpendicular to line P act (-1,6).

a) Find the equation of L. (2mks)

b) Find the equation of P in form ax + by = c, where a, b and c are constants. (2mks)

c) Given that another line Q is parallel to L and passes through point (1,2), find the x and y intercepts of Q. (3mks)

d) Find the point of intersection of lines P and Q. (3mks)

14. A triangle has vertices A (-5,-2), B(-3,-2) and C(-5,-5)

a) plot the triangle ABC on the graph paper provided. (1mk)

b) Triangle A’B’C’ is the image of triangle ABC after a reflection in the line y =x. Write down the coordinates of A”B”C”. (3mks)

c) Triangle ABC is rotated through +90o about the origin to obtain A”’B”’C”’. Write down the coordinates of A”’B”’C”’. (3mks)

15. Four towns P,Q,R,S and S are such that town Q is 120km due East of town P. Town R is 160km due north of town Q, S is on a bearing of 330o from P and on a bearing of 300o from R.

a) Using a scale of 1cm to represent 50km, draw a diagram to show the positions of towns P,Q,R and S. (5mks)

b) Determine:

i) the distance SP (2mks)

ii) the distance SR (2mks)

iii) the bearing of town S from town Q. (1mk)