MATHEMATICS PAPER 1 - 2019 LAINAKU JOINT MOCK EVALUATION EXAMINATION

SECTION 1 (50 MARKS)
Answer all questions in this section in the spaces provided.

1. Without using a calculator or mathematical table evaluate

   $^1/_3$ of (2 ¾ - 5 ½) x 3 $^6/_7 \div {}^9/_4$ (3mks)

2. Solve for x in the equation. (3mks)

   $$9^{(2x-1)} \times 3^{(2x+1)} = 243$$

3. A line P whose equation is y =1/3x+4 is parallel to another line Q. Find the equation of line Q in the form y= mx + c given that it passes through Point (3, 6) (3mks)
4. Using reciprocals, cubes and squire tables, evaluate correct to 4 significant figures: (4mks 1.897^2

   $$\sqrt[3]{\frac{1}{27.38}} + 1.897^2$$

5. A point P (2, 3) is mapped onto P' (-7, 0) under an enlargement with scale factor of -2 without drawing find the centre of enlargement. (3mks)
6. A businessman bought 100 textbooks and 80 pens for sh. 25,600. If she had bought twice as many textbooks and half as many pens she would have paid sh. 7,400 less. Find the cost of one textbook and one pen. (3 mks)
7. The table below shows the number of faulty balls from 40 samples.

No. of faulty balls (c)	0	1	2	3	4	5
Frequency	20	8	6	1	1	4

   Calculate the mean.

8. Draw a sketch and find the area in hectares of a coffee field whose measurements are entered in a field book as shown below. Take XY = 200m as the baseline. (4 marks)

	Y	
	180	40 to Q
To R 80	140	
To S 160	100	
	40	100 to P
	X	

9. In the following figure, 0 is the centre of the circle. Given that Angle ABC 60°, find the value of the angle ADC. (2mks)

MARKING SCHEME

No	Working	Marks	Remarks
1	$\begin{pmatrix}1 & -11\\3 & 4\end{pmatrix} \times \frac{22}{7} \div 9$ $= \frac{-11}{12} \times \frac{12}{7}$ $= \frac{-11}{7}$ $= -1\frac{4}{7}$	M1 M1 A1	
		3	
2	$9^{(x-1)} \times 3^{(2x+1)} = 243$ Change to base 3 $3^{2(2x-1)} \times 3^{(2x+1)} = 3^5$ $2(2x-1)+2x+1=5$ $4x-2+2x+1=5$ $6x-1=5$ $6x=6$ $x=1$	M1 M1 A1	
		3	
3	Gradient of Q = 1/3 $\frac{Y-6}{X-3} = \frac{1}{3}$ $3y = x+15$ $Y = {}^{1}/_{3}x+5$	B1 M1 A1	Must be in the form Y=mx+c
		3	
4	$\frac{1}{3.014} + 3.598$ $0.3318 + 3.598 = 3.9298$	M1 M1 M1	Cube root square