MATHEMATICS PAPER 1 - KCSE 2019 ALLIANCE MOCK EXAMINATION

SECTION I (50 MARKS)

Answer all the questions from this section

1. Without using a calculator evaluate (3 marks)

$$\frac{-2(-5+8)-9\div3-5}{-3\times-5+-2\times4}$$

2.
      a. use mathematical tables to find the:
            i. The square of 86.46 (1 mark)
            ii. The reciprocal of 27.56 (1 mark)
      b. Hence or otherwise calculate the value of; (2 marks)

$$\frac{86.46^2}{27.56}$$

3. The sum of the interior angles off an n – sided polygon is 1440^0. Find the value of n and hence deduce the name of the polygon. (3 marks)

4. Two containers have base areas of $750cm^2$ and $120cm^2$ Calculate the volume of the larger container in litres given that the volume of the smaller container is $400cm^3$. (3 marks)

5. Given that the column vectors $a = \begin{pmatrix} -1 \\ 4 \end{pmatrix}, b = \begin{pmatrix} -3 \\ -2 \end{pmatrix}$ and $c = \begin{pmatrix} -2 \\ -1 \end{pmatrix}$ and that P=2a-4b+3c . Express P as a column vector. (3 marks)

6. Solve the following inequalities and represent the range of values of x on a single number line. (3 marks)

$$5 - 3x > -7$$
$$x - 6 \leq 3x - 4$$

7. The cost of a car outside Kenya is US $ 4800. You intend to buy one such car through an agent who deals with Japanese Yen. The agent will charge 15% commission on the price of the car and further 72 220 Japanese Yens for shipment of the car. How many Kenya shillings will you need to send to the agent to obtain the car given that:
   1 US $ = 117.20 Japanese Yens
   1US $ = Kshs 72.34   (3 marks)

8. Two numbers p amd q are such that $p^3\times q = 189$. Find p and q (3 marks)

9. Evaluate without using mathematical tables. (3 marks)

$$1000\left(\sqrt{\frac{0.0128}{200}}\right)$$

10. Simplify the following expression by reducing it to a single fraction. (3 marks)

$$\frac{2x-3}{3} - \frac{x-2}{2} - \frac{1-x}{4}$$

MARKING SCHEME

SECTION I

	WORKING	MARKS	GUIDELINES
1.	Numerator: $-2(-5+8) - 9 \div 3 - 5$ $-6 - 9 \div 3 + 5$ $-6 - 3 - 5 = -14$ Denominator: $-3 \times -5 + -2 \times 4$ $15 - 8 = 7$ Quotient $\dfrac{-14}{7} = -2$	M1 M1 A1	
		4	
2.	(a) (i) $86.46^2 = 7475$ (ii) $\dfrac{1}{27.56} = \dfrac{1}{2.756 \times 10^2} = 0.03628$ (b) $\dfrac{86.46^2}{27.56} = 7475 \times 0.03628$ $\qquad = 271.2$	B1 B1 M1 A1	
		3	
3.	$\dfrac{90}{90}(2n - 4) = \dfrac{1440}{90}$ $(2n - 4) = 16$ $2n = 20$ $n = 10$ Decagon	M1 A1 B1	
		3	
4.	$A.S.F = \dfrac{750}{120} = \dfrac{25}{4}$ $L.S.F = \sqrt{\dfrac{25}{4}} = \dfrac{5}{2}$ $V.S.F = \left(\dfrac{5}{2}\right)^3 = \dfrac{125}{8}$ Volume of larger $= \dfrac{125}{8} \times \dfrac{400}{1000} = 6.25$ litres	M1 M1 A1	
		3	