Name………………………………………………… AdmnNo………........Class…………..........

121
MATHEMATICS
TIME: 2 HOURS

FORM TWO HOLIDAY ASSIGNMENT ONE

INSTRUCTIONS TO THE CANDIDATES

a) This paper consists of **two** sections; *Section I* and *Section II.*
b) Answer *All questions* in *Section I* and *only* **THREE** *questions* from *section II*

SECTION 1

1. Evaluate $5 \frac{1}{2} - 1 \frac{1}{7} (1 \frac{1}{5} + \frac{9}{10}) + \frac{1}{3}$ of $(\frac{2}{3} \div \frac{5}{6})$ (3mks)

2. The interior angles of hexagon are $(4x - 5)^0$, $(4x + 5)^0$, $3x^0$, $(4x + 26)^0$, $2x^0$ and $(2x + 5)^0$

   Find the value of x   (3mks)

3. Use the exchange rates below to answer this question

	Buying	selling
1 US dollar	63.00	63.20
1 UK£	125.30	125.95

A tourist arriving in Kenya from Britain had 9600 UK sterling pounds (£). He converted the pounds to Kenya shillings at a commission of 5%. While in Kenya he spent ¾ of this money. He changed the balance to US dollars after his stay. If he was not charged any commission for this last transaction, calculate to the nearest US dollars the amount he received.   (4mks)

4. Use logarithm tables to evaluate the following (3mks)

$$\sqrt{\dfrac{6.195 \times 11.85}{83.52}}$$

5. A square based brass plate is 2mm high and has a mass of 10.5kg. The density of the brass is 8.4 g/cm^3. Calculate the length of the plate in centimeters. (3mks)

6. Find the equation of a line through point (5, -1) and perpendicular to line $4x + 2y - 3 = 0$.

(4 marks)

7. Solve the simultaneous equations.

$2x + 5y = 34$

$x + 2y = 21$ (3 marks)

9. Convert $0.1\dot{2}\dot{3}$ into a fraction. (2 marks)

10. Find the value of M in the following equation. (3mks)

$$\left(\frac{1}{27}\right)^{M} \text{X } 81^{-1} = 243$$

11. The ratio of the area of two circles is $\frac{16}{9}$
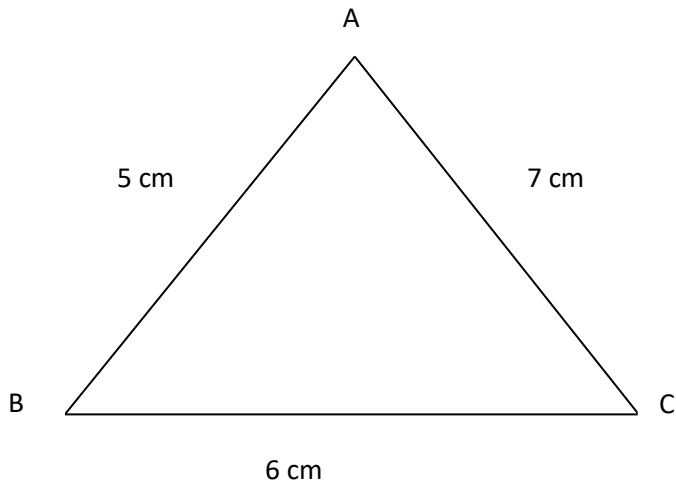
i) Find the ratio of their radii (2mks)

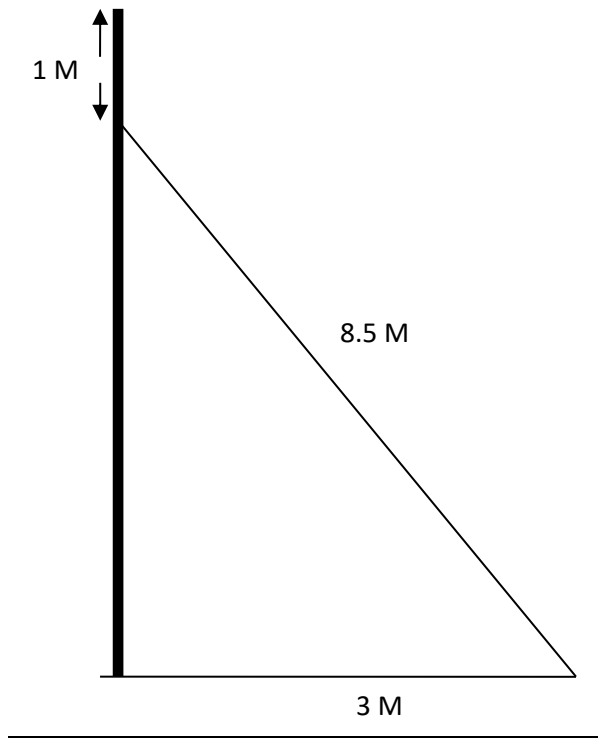ii) If the larger circle has a radius of 20cm, find the radius of the smaller one (2mks)

12. Find the area of a triangle ABC in which AB=5 cm, BC=6 cm, and AC = 7cm. (3mks)

12. Without using tables evaluate Sin 30^0 Cos 30^0 (2mks

13. An electric pole is supported to stand vertically by a tight wire as shown below. Find the height of the pole.

(3mks)

14. a) Plot on the graph provided a triangle with vertices A(-5,6), B(-3,3) and C(-5,3)   (2mks)

b) i) Draw the image A'B'C' under a reflection in the line x=0   (2mks)

ii) Write the coordinates of A'B'C'   (1mk)

c) i) Draw the image A''B''C'' of ABC under a reflection in the line y-x = 0   (2mks)

ii) Write the coordinates of A''B''C''   (1mk)

d) i) Using triangle ABC and A'B'C', show if the two triangles are congruent.   (1mk)

ii) If they are congruent, state the type of congruence   (1mk)

15. a) Using a ruler and compasses only, construct triangle ABC in which BC = 8cm, angle ABC = 30º and
     angle ACB = 45º   (3 marks)

b) Measure AB and AC.   (2 marks)

c) At A drop a perpendicular to meet BC at D.   (2 marks)

d) Measure AD and hence calculate the area of the triangle ABC.   (3 marks)

16. A salesman is paid a commission of 2% on goods worth over Ksh.100000. He is also paid a monthly salary of Ksh.12000. In a certain month, he sold 360 pairs of shoes at Ksh.500 each pair.

    (a)   Calculate the salesman's earning that month.   (3 marks)

(b) The following month, his monthly salary was increased by 10%. His total earnings that month were Ksh.17600. Calculate
   (i)   The total amount of money received from the sales of the shoes that month. (5 marks)

   (ii)   The number of pairs of shoes sold that month.   (2 marks)

17. i) Plot the points A(3,-3), B(6,-3), C(3,-6) and D(6,-6) and join to form a square.
                                               (2mks)

ii) A'B'C'D' is the image of ABCD under a reflection about the line y=2x +3.
(6mks)

iii) Calculate the area of the object ABCD. (2mks)