**KAHUHO UHURU HIGH SCHOOL**

**MATHEMATICS FORM TWO TUNE UP TERM 3 2013**

**NAME.....................................................………………………………**

**ADM\_NO………….…………......................................................................**

**TIME 2HRS 30MIN**

***INSTRUCTIONS TO CANDIDATES***

1. Write your name and admission number in the spaces above.
2. Attempt ALL the questions in spaces provided.
3. Show all your calculations and give your answer below each question.
4. Non – programmable silent calculators and KNEC mathematical tables may be used unless stated otherwise
5. Marks will be awarded for correct working even if the answer is wrong.

**For examiners use ONLY.**

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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | **Total** |
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| 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | **Total** |
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1. Evaluate

 (3 marks)

1. Ng’eno has three strings measuring 252 cm, 567 cm and 378 cm. He wants to cut each string such that all the pieces are of equal length. What is the largest possible size that each piece of string would be? (3 marks)
2. Express as a fraction. (2 marks)
3. In order to complete a certain job in 10 days, a company employs 30 men to work at the rate of 3 hours a day. Determine how long it would take 20 men working 12 hours a day to complete the same job. (3 marks)
4. The floor of a room measuring 15 m by 9 m requires 3 375 square tiles.
5. What is the measurement of each tile? (3 marks)
6. If the tiles available were as long, how many would be required? (2 marks)
7. The sides of a triangle ABC are given as AB = 4.5 cm, BC = 3.6 cm and AC = 2.4 cm
8. Construct the triangle. (3 marks)
9. Find the area of the triangle. (2 marks)
10. An umbrella and a pen are sold at a discount of 8% and 3% respectively. Calculate the overall discount offered on the two commodities if the cost of the umbrella is four times that of the pen. (3 marks)
11. The cost of six shirts and two pairs of trousers is Ksh. 1 320 while that of three shirts and four pairs of trousers is Ksh. 30 less. How much will George pay for two shirts and two pairs of trousers? (3 marks)
12. Use tables to evaluate the following:
13. (0.002416)2 (2 marks)
14.  (2 marks)
15. Juma has money in two denominations, twenty shilling coins and one hundred shilling notes. He has four times as many twenty shilling coins as one hundred shilling notes. If altogether he has Ksh. 2 160, how many one hundred shilling notes does he have? (3 marks)
16. Evaluate without using tables

 (3 marks)

1. A bus left town A for town B at 8.30 a.m. The journey took 5 hours and 5 minutes. At what time did the bus reach its destination? (2 marks)
2. Solve the equation:

 (3 marks)

1. The length of an arc is a fifth of its circumference. If the area of the circle is 346.5 cm2, find:
2. The angle subtended by the arc at the centre of the circle. (3 marks)
3. The area of the sector enclosed by this arc. (2 marks)
4. A two – digit number is such that the sum of the ones and tens digit is ten. If the digits are reversed, the new number formed exceeds the original number by 54. Find the number. (3 marks)
5. Three ladies Agnes, Betty and Cate contributed a total amount of Ksh. 21 000 to start a salon. The ratio of the contributions of Agnes to Betty was 3:5 and that of Betty to Cate was 2:1. How much did Betty contribute? (4 marks)
6. A metallic cuboid measuring 11 cm by 9 cm by 7.2 cm has a right cylindrical hole of diameter 5 cm drilled through the faces measuring 9 cm by 7.2 cm. Calculate:
7. The surface area. (3 marks)
8. The volume of the remaining solid. (3 marks)
9. Kiambu bought 216 pineapples at Ksh. 50 for every 6 and sold them all at Ksh. 40 for every 3. Calculate the percentage profit he made. (3 marks)
10. Given that x = 3, y = -2 and z = -1, find the value of:

 (3 marks)

1. Find the size of each exterior angle of a regular decagon. (2 marks)
2. The average mark scored by the first 24 students in a Mathematics test is 48.5. The average mark scored by the remaining 16 students is 57.25, calculate the mean mark for the whole class. (3 marks)
3. A woman is now five times as old as her son. In five years time, she will be three times as old as her son. Find their present ages. (3 marks)
4. Simplify:

 (3 marks)

1. Three – fifths of work is done on the first day. On the second, of the remainder is complete. If on the third day, of what remained is done, what fraction of work still remains to be done? (3 marks)
2. 150 examiners, each marking 80 scripts per day are needed to mark an examination in two weeks. How many days would 200 examiners each marking 40 scripts a day, take to mark the same examination? (3 marks)
3. 1.5 litres of water (density 1g/cm3) is added to five litres of alcohol (density 0.8g/cm3). Calculate the density of the mixture. (4 marks)
4. Solve the following pair of simultaneous equations. (3 marks)



1. A radio manufacturer makes radios and sells them to a distributor at a profit of 15%. The distributor sells the radios to a retailer at a profit of 30%. The retailer finally sells the radios to his customers at a profit of 50%.
2. A customer paid Ksh. 897 for a pocket radio. Find how it had cost the manufacturer to make the pocket radio. (3 marks)
3. A retailer bought a radio cassette player which had cost the manufacturer Ksh. 4000 to make. Calculate the amount he paid for it. (3 marks)
4. A customer bought a radio at Ksh. 2 691. Calculate how much the distributor had paid for the same radio. (2 marks)
5. Express as a percentage, the amount the customer paid for the radio in (c) above to the amount the distributor paid for it. (2 marks)