



NYASANDA COMMUNITY HIGH SCHOOL



FORM 2 MATHEMATICS.

CYCLE 2 TERM 2 2014.

TIME: 2 HOURS

NAME: ADM NO:

INSTRUCTIONS TO CANDIDATES.

1. Answer all the questions in the spaces provided after each question
2. Be neat and orderly in your presentation

FOR EXAMINERS USE ONLY.

QSN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MARKS																

QSN	17	18	19	20	21	TOTAL
MARKS						

1. Use logarithm tables to evaluate; ,

(4mks)

$$\sqrt[3]{\frac{3452 \times 0.00967}{(0.0354)^2}}$$

2. Evaluate the following without using a calculator (3mks)

$$\frac{-12 \div (-3) \times 4 - (-20)}{-6 \times 6 \div 3 + (-6)}$$

3. The number 5.81 contains an integral part and a recurring decimal. Convert the number into an improper fraction and hence a mixed factor (3mks)

4. Remove the brackets and simplify;

$$\frac{1}{2}xy(x-xy) - x(xy-x^2)$$

(3mks)

5. The profit of a firm is divided between new plant, reserves and dividends in the ratio 3:7:9, if the profit is sh. 380,000, what is the amount put to the reserve (3mks)

6. The length of an arc of a circle is 62.8 cm. Find the radius of the circle if the arc subtends an angle of 144° at the centre (Take $\pi = 3.142$) (3mks)

7. A flower bed measuring 8m by 7 m is surrounded by a path 1m wide. Find the area of the path (3mks)

8. There is a 25% loss when an article is sold at 200/= At what price should it be sold in order to make a profit of 5% (3mks)

9. Three angles $x = (3p + 25)^\circ$, $y = (2p - 20)^\circ$ and $z = (2p + 35)^\circ$ are on a straight line/ Find,
(i) The value of p

(ii) The value of x , y and z

10. The exterior angle of a regular polygon is $\frac{1}{2}x^\circ$ and the interior angle is $(x + 60)^\circ$ Find the sum of the interior angles of the polygon (4mks)

11. Solve for x in the equation (4mks)

$$9^{x+1} - 3x = 3^{x+3} - 3$$

12. Solve the following equation

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

13. Evaluate $\frac{1}{2} \left\{ \frac{1}{3} + \frac{1}{4} \left(\frac{1}{2} - \frac{3}{4} \right) \text{ of } 1\frac{1}{2} + 5 \right\}$

14. Arrange the following fractions in descending order (3mks)

$$\frac{4}{5} \quad \frac{9}{10} \quad \frac{11}{16} \quad \frac{12}{17}$$

15 Simplify the following expression $\frac{a+3}{(3+a)(3-a)}$

16 Obtain the number whose standard forms are

(a) 1.6×10^3

(b) 2.514×10^3

SECTION B.

17 A pilot sets to fly from P to S through Q and R. the distance of Q from P is 820km on a bearing of 055° . R is 600km on a bearing of 330° from Q while S is on a bearing of 240° a distance of 1000km from R.

(a) Using a suitable scale, draw a diagram to represent the flight route (5mks)

(b) Determine the bearing of S from P; (1mk)

(c) The pilot flew from S directly to P at a speed of 650 km/h. How long did the flight take (3mks)

(d) Determine the distance between P and R (1mk)

18. The vertices of an object WXYZ are W(2,2) X (-4,2) Y (-4,4) and Z (-2,4);

(a) Draw the object on a cartesian plane. (2mks)

(b) The object undergoes a reflection in the line $y = x$ followed by a reflection in the line $y = 0$; Draw the images and give coordinates of the last image (6mks)

- 19 (a) John bought two shirts and three pairs of trousers at ksh. 1750/= Had he bought three shirts and two pairs of trousers, he would have saved ksh. 250 Find the cost of each item. (5mks)

[b] Oliech spent $\frac{1}{3}$ of his salary on school fees. He spent $\frac{1}{4}$ of the remainder on electricity. He further spends $\frac{1}{5}$ of what was left on transport. He was left with sh. 1800. Calculate his monthly income. (5mks)

- 20 a) Find equation of a straight line passing through the points (3,2) and (-3,6) give your answer in the form of $y = mx + c$. (3mks)

[b] determine the equation of another line perpendicular to the one in [a] above. (2mks)

[c] Given that $-\frac{3}{5}x + 3y - b = 0$ is an equation of a straight line. Find

(i) The gradient of the line (2mks)

(ii) The equation of a line parallel to the above and passing through the point (2,3) in the form of $\frac{x}{a} + \frac{y}{b} = 1$

21(a) A Kenyan bank buys and sells foreign currencies using the rates shown below

	Buying (ksh)	Selling (Ksh)
1 Euro	86.25	86.97
100 Japanese Yen	66.51	67.26

A Japanese traveling from France arrives in Kenya with 5000 Euros which he converts to Kenyan shillings at the bank. While in Kenya, he spent a total of Ksh. 289950 and then converted the remaining Kenya shillings to Japanese Yen at the bank. Calculate the amount of Japanese Yen he received. (5mks)

(b) John is a sales agent in a company that pays him a basic salary of 5000. In addition he is given a commission of 5% on sales with sh. 200,000. Ksh. 7.5 on any additional sales above Ksh. 200,000. In January his total sales was sh. 420,000 how much did he earn. (5mks)