HOLY TRINITY SSS NKOZI

ONLINE EXAMINATIONS

S.3 MATHEMATICS 456/2

Paper 2

Time: 2hrs

INSTRUCTIONS

Answer all questions

SECTION A

1. Simplify $\frac{2^{-2}x3^{-3}}{2^{-4}x3^{-6}x1}$

2. Simplify $\frac{\sqrt{63}+\sqrt{28}}{\sqrt{175}-\sqrt{63}}$ as far as possible

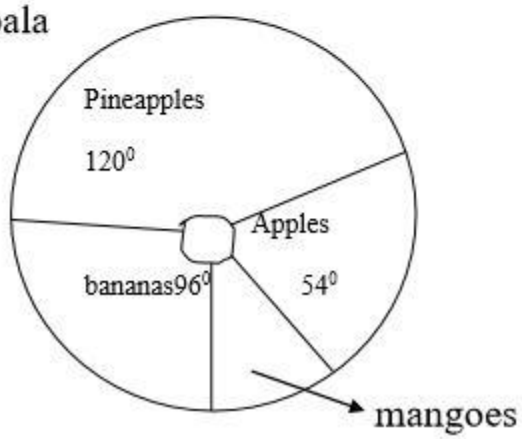
3. The diagonals of a rhombus are 20cm and 48cm respectively. Determine the length of the side of the rhombus

4. Factorize $18a^2-18b^2$ completely

5. If A=$\begin{pmatrix}2 & 0\\ 0 & 2\end{pmatrix}, B=\begin{pmatrix}4 & 8\\ 2 & 6\end{pmatrix}$ find det(AB)

6. Find the equation of the line passing through the points (2,1) and (5,8)

7. The pie chart below shows the fruits popularly sold in a daily super market in Kampala



If 420 apples were sold on a given day. Determine

i) The total number of fruits that were sold that day ii) How many mangoes were sold that day?

8. There are enough chicken feeds to feed 360 chicken for 21 days. Find how many more chicken would be needed for the same feeds to last 15 days?

SECTION B (ATTEMPT 5 ONLY)

9.a) copy and complete the table below

X	-4	-3	-2	-1	0	1	2	3	4
X^2-2									
$-x^2$+6									

b) plot on the same axes the graphs of $y=x^2-2$ and $y=6-x^2$ for $-4 \leq x \leq 4$

10.a) express 1.252525...as a fraction

b) Given that 2g-e = 3g(g-e),express g in terms of e in its simplest form ii) Express $\frac{\sqrt{4}+\sqrt{3}}{\sqrt{4}-\sqrt{3}}$ in the form $a+b\sqrt{c}$ where a,b and c are constants

13. A speed boat sets off from an island M on a bearing of 080^0 to an island X at an average speed of 150kmh^{-1}. Island x is 450 km from island M. At X,it alters its course to a bearing of 200^0 and maintains the average speed of 150kmh^{-1} for 3 hours until it reaches island Y. it then moves to island P which is west of island M at an average speed of 200kmh^{-1}. Island P is 400km from island M.

a) using a scale of 1cm to represent 50km,construct a scale drawing to show the route of the speed boat

b) use the scale drawing in (a) above to find the distance PY

c) calculate the

i) total time taken for the speed –boat to move from M to P

ii) speed boat's average speed for whole journey

14. a) Express $\frac{2}{x+4}+\frac{4}{x-3}-\frac{4(x+4)}{x2+x-12}$ *in the form* $\frac{a}{(x+b)}$

b) Evaluate $\frac{(y^2)^{1/5}}{(9x)^{1/2}}$ when x=16 and y=8

15. A rectangle of length (4x-1) and the breadth 2xcm has an area of $10cm^2$

Find a) the value of x

b) Its length and breadth

c) Its perimeter

16. a) The lines ax+2y=3 and ax-by=5 intersect at (1,2). Find a and b

b) If $\begin{pmatrix}4 & 1\\ x & -1\end{pmatrix}\begin{pmatrix}x\\ y\end{pmatrix}=\begin{pmatrix}4\\ 8\end{pmatrix}$, determine the values of x and y

END