Name: .... Admission Number: ....

Stream. .... Date. ....

ARGWINGS KODHEK SECONDARY SCHOOL

MATHEMATICS
Paper 1
FORM THREE
HEADSTART EXAM
2 ½ hours

FOR EXAMINER'S USE ONLY

Questions	Student's score
1-13	

Answer all questions

1. $1\frac{2}{3}$ of $\frac{2}{5} \cdot \frac{2}{5} \div 1\frac{1}{5}$

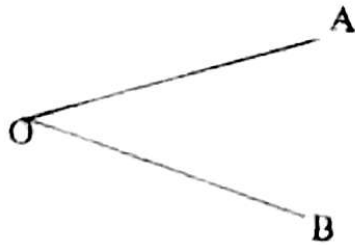$(\frac{5}{12} + \frac{1}{3}) \div \frac{3}{5} \times \frac{2}{5}$ (3mks)

2. Use reciprocal tables to evaluate
$\frac{1}{34.36} + \frac{5}{42.46}$ (4mks)

3. Sector AOB has an area of $21\frac{3}{14}$cm^2 and angle AOB=30^0

Calculate the perimeter of the sector $(\pi = \frac{22}{7})$ (4mks)

2

4. If $x:y=4:7$ and $y:z=5:3$ find the ratio $x:y:z$ (3mks)

5. Solve the following pairs of simultaneous inequalities and represent your answer on the number line
   $25 > 1 - 6x > 3x + 7$ (4mks)

6. A rectangular room is 4 metres longer than its width. If its area is $12m^2$ find its dimensions (4mks)

7. Four interior angles of a hexagon are 100^0, 140^0, 125^0 and 105^0. Then fifth interior angle is four times the sixth. Find in degrees, the fifth and the sixth interior angles (3mks)

8. A Kenyan bank buys and sells foreign currencies at an exchange rates shown below.

	Buying (ksh.)	Selling (ksh)
1 Euro	147.56	148.00
1 US dollar	74.22	74.50

An American arrived in Kenya with 20,000 Euros. He converted all the euros to Kenya shillings at the bank. Find the amount in dollars that he received (3mks)

9. Solve for C given that

$$(5^{2c})^3 = (5^4) \times 625$$ (3mks)

10. Two similar cylinder have diameters of 7cm and 21cm. if the volume of the larger cylinder is 6237cm³, find the height of the two cylinders.   (3mks)

11. If cos $\theta = {}^{15}/_{17}$, find without using tables or calculators
   a). sin θ (1mk)

b). ~~Tan~~ ~~sin(90~~]

$$\tan \theta \, \sin(90 - \theta) \quad 2mks$$

12. Solve the simultaneous equation by substitution method $\qquad$ (3mks)

$$X - 2y = 6$$
$$2x + 3y = 5$$

13. A motorist left Kisumu for Ugunja a distance of 240km, at 8.00am and travelled at an average speed of 90km/hr. another motorist left Ugunja for Kisumu at 8.30am and travelled at 100km/hr. Find

a). the time they met   (5mks)

b). How far they met from Ugunja   (5mks)