**MIDTERM TWO EXAMS**

**SENIOR THREE**

**MATHEMATICS PAPER ONE**

**INSTRUCTIONS;**

- Attempt all questions in section A and ONLY FOUR in section B.

**TIME;2hrs 30mins**

**SECTION A (40 MARKS).**

1. Simplify; .

2. Given that .Find n.

3. 8kg of sugar costs shs.12000.How many kilos of sugar will Jane buy with shs.1800?

4. If P is inversely proportional to the square of q, P=4, q=5, find q when p=25.

5. Simplify;

6. Express; .in the form Find the values of .

7. A coin and a die are tossed and rolled together at once. Find;

(i) sample space for the outcomes

(ii) the probability that a head and a prime number show up.

8. Given that; n(B)=25, n()=30 and n(A)=18.

Find ; (i) n

(ii) n.

9. Given that; .find; (i)

(ii)

10. Given that ,find

(i)

(ii)

**SECTION B(60 MARKS).**

11. A ship sets off from port A on a bearing of 700 to port B which is 85 km away. From B it sailed on a bearing of 1300 towards port C which is 65km away. From C it sailed on a bearing of 2700 towards port D which is 50km away.

(a) Draw a sketch diagram for the path of the ship.

(b) Use a scale of 1cm to 10km to draw a scale diagram for the path of the ship.

(c) Find the shortest distance of A from D.

(d) Find the bearing of D from A.

12. (a) Solve the equations

(b) Use the graphical method to solve the equations below.

13. A group of 40 students attended a workshop. It was observed that 25 liked Math, 28 liked Physics, 20 liked Chemistry,14 liked both Physics and Chemistry,18 liked both Math and Physics and 14 liked both Math and Chemistry. Given that n(MuPuC)=37;

(a) Draw a Venn diagram to represent the above information.

(b) Find the number of students who liked all the three subjects.

(c) Find the probability that a student picked at random likes none of the subjects.

14. (a) Construct triangle ABC such that AB=9.6cm,angle CAB=600,AC=7.2cm and

CB=6.6cm.

(b) Construct a circumscribing circle on the triangle and measure its radius.

15.

Q

R OO T

P

S

In the diagram above QP and SP are tangents to the circle centre O and radius 10cm.If OP =26cm, find;

(a) the length SP.

(b) the values of , and

END.

SUCCESS TO YOU ALL