**FORM 3 TERM 1 2022**

**MATHEMATICS PP1**

**NAME: …………………………………………..………………………ADM: ………..CLASS: ………….**

**SECTION I (50 MARKS) ANSWER ALL QUESTIONS IN THIS SECTION**

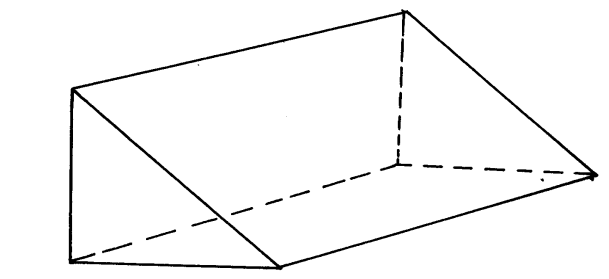
1. Evaluate: (3mks)

(13/7-5/8)×2/3

+15/7÷470f 21/3

1. Mr. kamau son and daughter needed clothes. The son clothes were costing ksh 324 while the daughter clothes were costing ksh 220 .Mr. kamau wanted to give them equal amounts of money. Calculate the least amount of money he would spend on the two and how clothes each will buy. (3mks)
2. use reciprocal tables to find the value of (0.325)-1 hence evaluate (),give answer to 4 s.f (4mks)
3. Rationalize the denominator of: (3mks)
4. A square based brass plate is 2mm high and has a mass of 1.05kg. The density of the brass is 8.4 g/cm3.calculate the length of the plate in centimeter. (3mks)
5. solve for x in the equation (3mks)
6. A positive two-digit number is such that the product of the digits is 24.When the digits are reversed, the number formed is greater than the original number by 18.find the number (3mks)

1. using the three quadratic identities only factorize and simplify: (3mks)
2. Two numbers are in the ratio 3:5.When 4 is added to each the ratio becomes 2:3.What are the numbers? (3mks)
3. In a regular polygon, the exterior angle is 1/3 of its supplement. Find the number of sides of this polygon. (3mks)
4. Find the area of a segment of a circle whose arc subtends an angle of 221/2 on the circumference of a circle, radius 10cm. (3mks)
5. Mr. onyangos piece of land is in a form of triangle whose dimensions are 1200m,1800m and 1500m respectively. Find the area of this land in ha.(give your answer to the nearest whole number) (3mks)
6. Two men each working for 8hours a day can cultivate an acre of land in 4 days. How long would 6men, each working 4hours a day take to cultivate 4 acres? (3mks)
7. Find the equation of a straight line which is perpendicular to the line 8x+2y-3=0 given that they intersect at y=0 leaving your answer in a double intercept form. (3mks)
8. Find the value of x if  **(3 marks)**
9. The figure below show s a right angled triangular prism of uniform cross- section AF = 6cm, AB = BC = 12cm and CE = 8cm. Find the surface area of the prism. (**4marks)**



8 cm

12 cm

12 cm

6 cm

A

B

C

E

F

D

**SECTION II**

**ANSWER ONLY FIVE QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED.(50mks)**

1. A car whose initial value is ksh 600,000 depreciates at a rate of 12% p.a.Determine:

a)its value after 5 days (4mks)

b) Its valueof depreciation after 5 years(2mks)

c) The number of years it will take for the value of the car to be ksh 300,000(3mks)

1. On the graph paper provided plot the points P(2,2) Q(2,5) and R(4,4)
2. Join them to form a triangle PQR (1mk)

b) Reflect the triangle PQR in the line x=0 and label the image s P1Q1R1.(2mks)

c) Triangle PQR is given translation by vector T() to P11Q11R11.plot the triangle P11Q11R11.(3mks)

d) Rotate triangle P11Q11R11 about the origin through -900.state the coordinates of P111Q111R111.(3mks)

e) Identify two pairs of triangle that are direct congruence (1mk)

1. Three warships P,Q and R are at sea such that ship Q is 400km on a bearing of N300E from ship P. ship R is 750km from ship Q and on a bearing of S600E from ship Q.an enemy warship S is sighted 1000km due south of ship Q.
2. Use scale drawing to locate the position of ships P,Q,R and S (4mks)
3. Find the compass bearing of(2mks)
4. Ship P from ship S
5. Ship S from ship R
6. Use scale drawing to determine(2mks)

i)the distance of S from P

Ii) the distance of R from S

1. Find the bearing of(2mks)

i)Q from R

ii)P from Q

1. The table below shows the amount in shillings of pocket money given to students in a particular school.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pocket money(ksh) | 201-219 | 220-229 | 230-239 | 240-249 | 250-259 | 260-269 | 270-279 | 280-289 | 290-299 |
| No.of students | 5 | 13 | 23 | 32 | 26 | 20 | 15 | 12 | 4 |

a) State the modal class(1mk)

b) Calculate the mean amount of pocket money given to these students to the nearest

shillings (4mks)

c) Usethe same axes to draw a histogram and a frequency polygon on the grid

Provided (5mks)

19) Given that points X(0,-2), Y(4,2) and Z(x,6);

a) Write down the column vector (1mk)

b) i) find leaving your answer in index form(3mks)

ii) Given that =11.3170, find the coordinates of Z (3mks)

c) Find the mid-point of the line YZ (3mks)

1. A bus and a matatu left voi for Mombasa ,240km away at 8.00am.they travelled at 90km/h and 120km/h respectively. After 20minutes the matatu had a puncture which took 30 minutes to mend.it then continued with thee journey.
2. How far from voi did the matatu catch up with the bus (6mks)
3. At wht time did the matatu catch up with the bus? (2mks)

c) At what time did the bus reach Mombasa? (2mks)