**NAME ----------------------------------------------------------------------- INDEX NO-----------------------------------**

**DATE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CANDIATES SIGNATURE \_\_\_\_\_\_\_\_\_\_\_\_\_**

**121/1**

**F2 MATHEMATICS**

**Term 1**

**NAME: ……………………………………………………….CLASS: ……ADM NO: …...SCHOOL:………**

 **ANSWER ALL THE QUESTIONS IN THE SPACES PROVIDED BELOW EACH QUESTION**

**SECTION 1(50 MARKS)**

1. Evaluate  [3 Marks]
2. A matatu travelling at 56 Km/h take 2 ½ hours to move from town A to town B.

Find the distance between towns A and B. [2 Marks]

1. Determine the gradient and the co-ordinates of the and intercepts of the line whose equation is  [3 Marks]
2. Find the correct 3s.f the value of

  +  +  [2 Marks]

1. Without using mathematical tables, evaluate [3 Marks]

 

1. The diagonals of a rhombus measure 9.2 cm and 7.5 cm respectively. Calculate the area of the rhombus [2 Marks]
2. A man is three times as old as his daughter. In twelve years time he will be twice as old as his daughter. Find their present age. [3 Marks]
3. Use logarithm tables to evaluate [4 Marks]

 

1. An artisan has 63Kg of metal of density 7000Kg/m3. He intends to use it to make a rectangular pipe with external dimension 12 cm by 15 cm and internal dimension 10 cm by 12 cm. calculate the length of the pipe in metres. [4 Marks]
2. Determine the equation of a line that passes through (-2,5) and is parallel to the line whose equation is  [4 Marks]
3. Use the elimination method to solve the simultaneous equations

 [4 Marks]



1. A trader sold a wrist watch for sh. 3,150 after giving a 10% discount. Find the marked price of the watch. [2 Marks]
2. Express as a fraction in its lowest form [3 Marks]

 **3.** 

1. Seven people can build five huts in 30 days. Find the number of people working at the same rate that will build nine similar huts in 27 days. [3 Marks]
2. The size of each interior angle of a regular polygon is five times the size of the exterior angle. Find the number of sides of the polygon. [3 Marks]
3. Line AB below shows a side of triangle ABC. BC= 5cm and angle ABC = 60

 A B

* 1. Using a ruler and compass only, complete the triangle ABC. [2 Marks]
	2. From C construct a perpendicular to meet line AB at point N. Measure length CN in centimetres [2 Marks]
	3. Determine the area of triangle ABC [1 Mark]

**SECTION B [50 MARKS]**

1. Complete the tables below for the equations of the lines   + 4 and 
	1.   + 4 

|  |  |  |  |
| --- | --- | --- | --- |
|  | -2 | 0 | 2 |
| y |  | 4 |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | -2 | 0 | 2 |
| y |  | -3 |  |

* 1. using one big square to represent 1 unit on y – axis and 2 big squares to represent 1 unit on  – axis, draw the lines   + 4 and  [5 Marks]
	2. use your graphs to solve the simultaneous equations

  [1 Mark]

 

1. a school hall measure 10m long, 7m wide and 4m high. All its inside walls and ceiling are painted.

Calculate,

* + 1. the total surface area painted
		2. the cost of painting at 200/= per square metre. [10 Marks]
1. a bird flies from tree P to another tree Q which is 50m on a bearing of 030 from P. from Q the bird flies 80m due west to another tree R and finally flies due south to another tree S which is on a bearing of 120 from P.
	1. using the scale 1cm = 10m, construct an accurate scale drawing showing the positions of P,Q,R, and S [5 Marks]
	2. by measurement from your scale drawing determine;
		1. the distance and bearing of R from Q [2 Marks]
		2. the distance and bearing of S from R [2 Marks]
		3. the distance of S from P [1 Mark]
2. a. On a Cartesian plane plot and draw the triangle ABC, A(1,2), B (1,6), C (5,5) [2 Marks ]

b. Draw the image of triangle ABC after reflection on the line y=

c. Draw AB"C" the image of  ABC after reflection along y – axis [2 Marks]

d. Draw  AB"C" the image of A'B'C' after rotation through -180 about the origin [2 Marks]

e. Determine the mirror line that makes  A'''B"'C"' the image of triangle ABC [2 Marks]

1. The table shows recordings from surveyors’ field book.

 **B**

 280

 E25 200

 160 B 80

 C70 120

 100 D 50

 **A**

* 1. Draw a sketch diagram from the data in the field book [2 Marks]
	2. Given that the recordings are in metres, determine the area of the land in hectares.

[8 Marks]