FORM 2 END TERM 2 2020 MATHEMATICS

ANSWER ALL THE QUESTIONS IN THE SPACES PROVIDED BELOW EACH QUESTION

SECTION 1(50 MARKS)

1. Evaluate
$$\frac{-8 \div 2 + 12 \times 9 - 4 \times 6}{56 \div 7 \times 2}$$
 [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]

3. Determine the gradient and the co-ordinates of the x and y intercepts of the line whose equation is $^2y + 3x = 1$ [3 Marks]

4. Find the correct 3s.f the value of

$$\frac{1}{6.43} + \frac{2}{3.56} + \frac{1}{8.51}$$

[2 Marks]

5. Without using mathematical tables, evaluate $27^{2/3} \times \left(\frac{81}{16}\right)^{-1/4}$

6. The diagonals of a rhombus measure 9.2 cm and 7.5 cm respectively. Calculate the area of the rhombus [2 Marks]

7. 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]

8	Use logarithm	tables to	evaluate
Ο.	USE IUGAIIIIIII	เฉมเธอ เบ	Evaluate

[4 Marks]

$$\sqrt[4]{\frac{37^2 \times 0.0168}{75.63}}$$

9. 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]

10. Determine the equation of a line that passes through (-2,5) and is parallel to the line whose equation is 5y + 2x = 10 [4 Marks]

11. Use the elimination method to solve the simultaneous equations

$$2x + 3y = 1$$

[4 Marks]

$$3x = 2y + 8$$

12. A trader sold a wrist watch for sh. 3,150 after giving a 10% discount. Find the market the watch.	ed price of [2 Marks]
13. Express as a fraction in its lowest form 3. 71	[3 Marks]
14. Seven people can build five huts in 30 days. Find the number of people working at that will build nine similar huts in 27 days.	the same rate [3 Marks]
15. The size of each interior angle of a regular polygon is five times the size of the exterior find the number of sides of the polygon.	rior angle. [3 Marks]

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16. Line <i>i</i>	AB below shows a side of triangle ABC. BC= 5cm and angle ABC = 60°	
	A B	
a.	Using a ruler and compass only, complete the triangle ABC.	[2 Marks
b.	From C construct a perpendicular to meet line AB at point N. Measure length centimetres	CN in [2 Marks
C.	Determine the area of triangle ABC	[1 Mark]

SECTION B [50 MARKS]

17. Complete the tables below for the equations of the lines

$$y = -\frac{3}{4}x + 4$$
 and $y = -3 + 2x$

$$y = - \frac{1}{4}x$$

1.			X	+ 4
	x	-2	0	2
	,			_
	У		4	
	-			

$$y = -3 + 2x$$

x	-2	0	2
у		-3	

b. using one big square to represent 1 unit on y – axis and 2 big squares to represent 1 unit

on
$$^{\chi}$$
 – axis, draw the lines

$$y = -\frac{3}{4}x + 4$$
 and $y = -3 + 2x$

[5 Marks]

c. use your graphs to solve the simultaneous equations

$$3x + 2y = 8$$

$$2x - y = 3$$

18. a school hall measure 10m long, 7m wide and 4m high. All its inside walls and ceiling painted. Calculate,	g are
i. the total surface area paintedii. the cost of painting at 200/= per square metre.	[10 Marks]

- 19. 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.
 - a. using the scale 1cm = 10m, construct an accurate scale drawing showing the positions of P,Q,R, and S [5 Marks]
 - b. by measurement from your scale drawing determine;

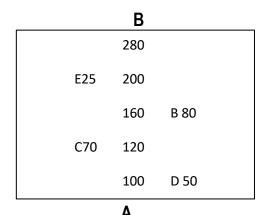
i. the distance and bearing of R from Qii. the distance and bearing of S from R[2 Marks][2 Marks]

iii. the distance of S from P [1 Mark]

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20. 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= x
c. Draw A B"C" the image of ABC after reflection along y – axis [2 Marks]
d. Draw A B"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]

21. The table shows recordings from surveyors' field book.



a. Draw a sketch diagram from the data in the field book

[2 Marks]

b. Given that the recordings are in metres, determine the area of the land in hectares.

[8 Marks]