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

**DATE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CANDIDATE’S SIGNATURE \_\_\_\_\_\_\_\_\_\_\_\_\_**

**FORM 2 MATHEMATICS**

**OPENER EXAMINATION: TERM 2 2024**

1. Without using mathematical tables, evaluate  (3mks)
2. Use reciprocals and cube tables to evaluate to 4 significant figures.  (3mks)
3. A Kenyan bank buys and sells foreign currencies as shown below. ()

|  |  |  |
| --- | --- | --- |
|  | Buying (in kenya sh) | Selling (in Kenya sh) |
| 100 Japanese yen | 102.35 | 102.65 |
| 1 sterling pound | 134.46 | 134.74 |

A school received a grant of 6 000 sterling pounds from Britain.

1. Calculate the amount of money in Kenyan shillings the school received. (2mks)
2. If the school management intends to buy a school van from Japan worth Ksh 800 000. Calculate the cost of the car to the nearest Japanese yen. (2mks)

5. Use the elimination method to solve the simultaneous equations

 [3 Marks]



1. A pentagon has the following interior angles; and  Find the value of y and hence the largest angle. (2mks)

1. Using a ruler and a pair of compasses only, construct triangle ABC such that AB = 4 cm, AC = 8 cm and  (3mks)
2. 8. Without using tables or calculator, evaluate:  (3mks)
3. A saleswoman is paid a commission of 2% on goods sold over Ksh 100 000. She is also paid a monthly salary of Ksh 12 000. In a certain month, she sold goods worth sh 180 000. Calculate the saleswoman earnings that month. (3mks)

1. 11. Express  as a fraction leaving it in the form  (3mks)
2. 12 Three alarms go off at intervals of 12 seconds, 18 seconds and one minute. At 6.30 p.m, the alarms went off simultaneously. Find the times when the three alarms go off simultaneously again in the next 10 minutes. (3mks)

**SECTION B [40 MARKS]**

1. A plane leaves airport P for airport Q, 500 km away on a bearing of  It then flies to airport R 600km away on a bearing of  From R, it flies west to another airport S which is to the south of P.
2. Use a scale of 1 cm represents 100 km, draw a diagram showing the relative positions of the four airports. (4mks)

1. Use the scale drawing to find the
2. Distance between airport P and airport R. (2mks)

1. Bearing of R from P. (1mk)

1. Distance and bearing of S from Q (3mks)

1. A butcher bought a number of bulls and a number of goats at sh.15500 per bull and sh.2400 per goat spending a total of sh 43000.if he had bought half as many bulls and twice as many bulls and twice as many goats he would have saved sh.3500.he slaughtered all the animals and sold the meat at a profit of 30% per bull and 40% per goat. Determine
2. The number of bulls and the number of goats the butcher bought. (5mks)

1. The percentage profit he made on all the animals giving your answer to one decimal place. (5mks)

16. 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 [3 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 [3 Marks]

17. 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]

19. A line L passes through points (-2, 3) and (-1, 6) and is perpendicular to a line P at (-1, 6)

1. Find the equation of line L (2mks)

1. Find the equation of P in the form y=mx+c (2mks)
2. Given that another line Q is parallel to L and passes through point (1, 2). Find the X and Y intercept.

(3mks)

1. Find the point of intersection of line P and Q (3mks)

20 .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]