SECTION A: 40 MARKS

Attempt **all** questions in this section.

Questions **1** *to* **20** *carry* **two** *marks each.*

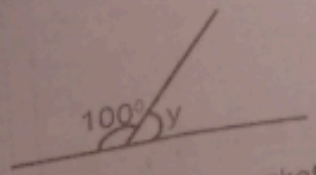
1. **Work out:**
$$\begin{array}{r} 12 \\ \times\ 4 \\ \hline \\ \hline \end{array}$$

2. Write **94** in Roman numerals.

3. Given that set P = {a, b, c, d, e} and set Q = {a, e, i, u}. Find n(PUQ).

4. **Simplify:** $\frac{11}{12} - \frac{2}{3}$

5. Find the value of y in the figure below.



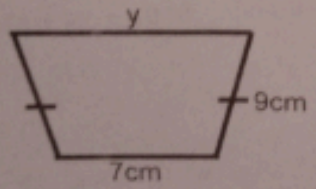
6. Nakate buys a packet of pens for sh.10,400 and sells it for sh.15,600. The selling price of 8 pens is equal to the buying price of a packet. How many pens are contained in a packet?

7. A team leader recorded points scored by different members as follows;
3, 4, 2, 2, 3, 4, 2.
Find the modal frequency of the scores.

8. **Convert** 101_{two} to base ten.

9. Jjunju worked for $2\frac{1}{2}$ hours. Express this time in minutes.

10. The perimeter of the figure below is **45cm**. Calculate the length marked **y** in cm.



11. Using a ruler, a sharp pencil and a pair of compasses only, construct an angle of **90°** in the space provided below.

12. Give the solution set for $x \leq {}^{+}1$.

13. Find the number of mangoes that can be divided by 9 pupils or 6 pupils to leave a remainder of 4.

14. Write the number **40,050** in **words**.

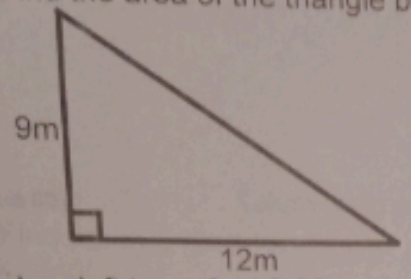
15. **Work out:** ${}^{+}8 - {}^{+}5$.

16. **Simplify:** 9b - 2b.

17. Express $\mathbf{0.\overline{21}}$ as a common fraction in the simplest form.

18. List all the factors of 8.

19. Find the area of the triangle below.



20. Leo left town **A** at **9:30am** and drove to town **B**. He arrived at **B** at **12:30p.m**. Calculate the time he took driving.

SECTION B: 60 MARKS

Attempt **all** questions in this section.

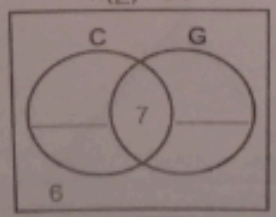
Marks for **each part** *of the question are* **indicated** *in the brackets.*

21. (a) Express 200_{five} to base ten. *(02 marks)*

(b) If $20_x = 1010_{two}$, find base x. *(03 marks)*

22. Out of 31 farmers, 7 keep both cows (C) and goats (G). K farmers keep cows, and 15 farmers keep goats while 6 farmers do not keep the mentioned animals.

(a) Use the above information to complete the Venn diagram below. *(02 marks)*



(b) Find the value of K. *(02 marks)*

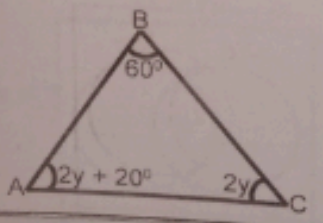
(c) How many farmers keep only one type of animals? *(02 marks)*

23. In a hospital, there are 50 male workers. 60% of the hospital workers are female.

(a) Find the total number of workers in the hospital. *(03 marks)*

(b) By what percentage is the number of female workers more than that of male workers in the hospital? *(02 marks)*

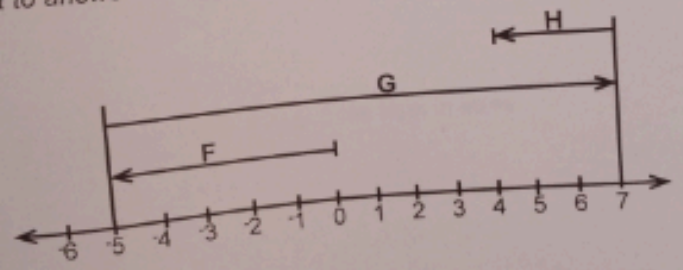
24. **The diagram below ABC is a triangle.** *Study and use it to answer the questions that follow.*



(a) Find the value of y in degrees. *(03 marks)*

(b) Find the size of angle marked **BCA**. *(02 marks)*

25. **The number line below represents addition operation.** *Study and use it to answer the questions that follow.*



(a) Write the value of the integers represented by arrows **H, F** and **G**. *(03 marks)*

(i) H: _____

(ii) F: _____

(iii) G: _____

(b) Draw an answer arrow to complete the number line above. *(01 mark)*

26. A motorist started his journey of **180km** at **8:00a.m**. The journey took him **3 hours**.

(a) Calculate his speed in km/h. *(02 marks)*

(b) At what time had the motorist covered 120km? *(03 marks)*

27. With the help of a ruler, a sharp pencil and a pair of compasses only, construct a square **ABCD**, where line **BC = 6cm**. *(04 marks)*

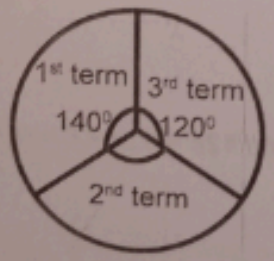
28. (a) Given that a = 2, b = 3 and c = 5. Find the value of **ab + bc**. *(03 marks)*

(b) **Solve for x:** 3x - 3 = 33. *(02 marks)*

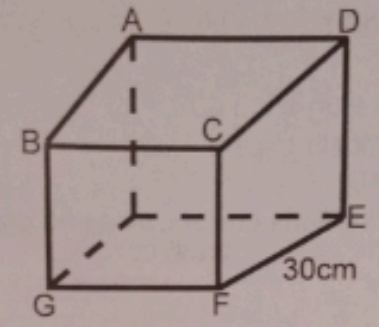
31. Mr. Bogere arrived in Uganda with the following currencies;
    (i) *US dollars ($) 400*
    (ii) Pound Sterling (£) 300
    (iii) Kenya shillings 2000

    If 1 US dollar ($) costs Ug sh. 3,600,
    1 Pound Sterling (£) costs Ug sh. 4,000,
    1 K.sh costs Ug sh. 40,
    How much money in Uganda currency was he given in the Forex bureau altogether? *(04 marks)*

32. The pie chart below shows Nalongo's last year's expenditure of sh.1,440,000 on her son's school requirements. Calculate the amount of money Nalongo spent on the requirements per term. *(04 marks)*



29. **The diagram below shows a rectangular tank. The area of the surfaces BCFG and CDEF are 3,500cm² and 2,100cm² respectively.**



(a) Find the height of the tank. *(02 marks)*

(b) Find the area of the top cover **ABCD** of the tank. *(02 marks)*

(c) Calculate the capacity of the tank in litres. *(02 marks)*

30. (a) Find the **GCF** of **9** and **12**. *(02 marks)*

(b) Find the sum of the **second** and the **fourth** prime numbers. *(02 marks)*