MATHEMATICS

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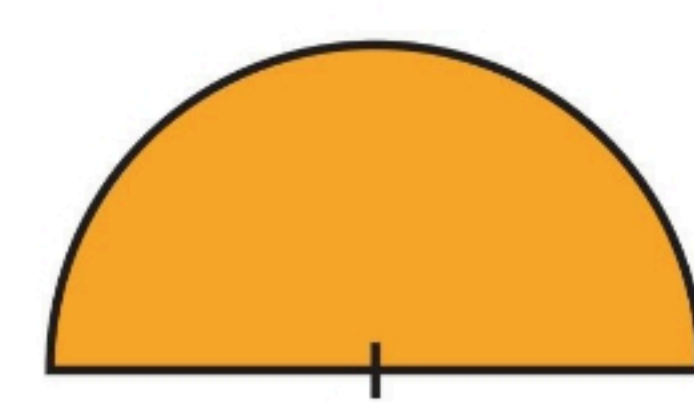
1. Work out:

$$21 \times 4$$

2. Find the complement of $(x + 10^0)$

3. Add carefully: $22_{four} + 13_{four}$

4. Given that k= -3 and m = 5, find the value of k(3m − k)?

5. The price of petrol is decreased by 30%. If the new price is sh.3500, find the old price.

6. Express CLXV in Hindu Arabic numerals.

7. If a cyclist covers a distance of 110m per minute, how long will the journey of 33km take?

8. Find the median of 8, -9, 9, -3, and 7.

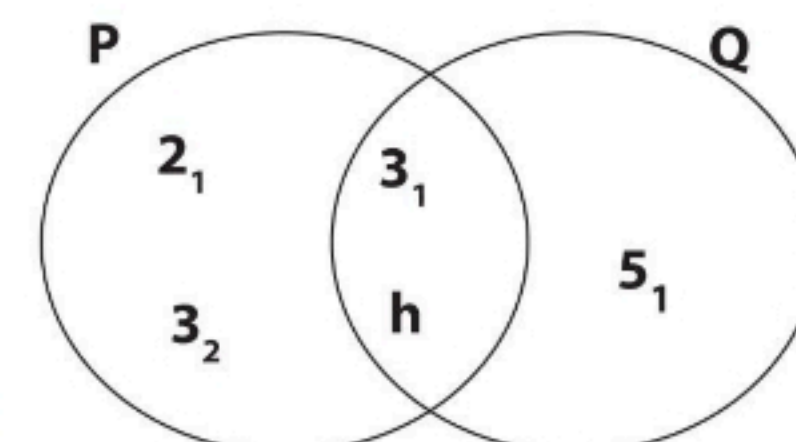9. Using a ruler and a pair of compasses only, construct an angle of 75^0

SECTION A

10. The cost of $\frac{1}{4}$ a dozen sweets is sh 2400. Find the cost of 8 sweets.

11. Find the value of d, the diameter of the figure if its circumference is 110m.

12. Solve for h if 15 − h = 13.

13. Express $3\frac{1}{2}$ % as a fraction in its lowest terms.

14. A party that took $2\frac{3}{4}$ hours ended at 7:20pm. At what time did the party start?

15. Express 863.4 in standard form.

17. Bwana deposited sh.600,000 in a bank for 2 years and earned an interest of sh 78,000. What was the rate of interest per annum?
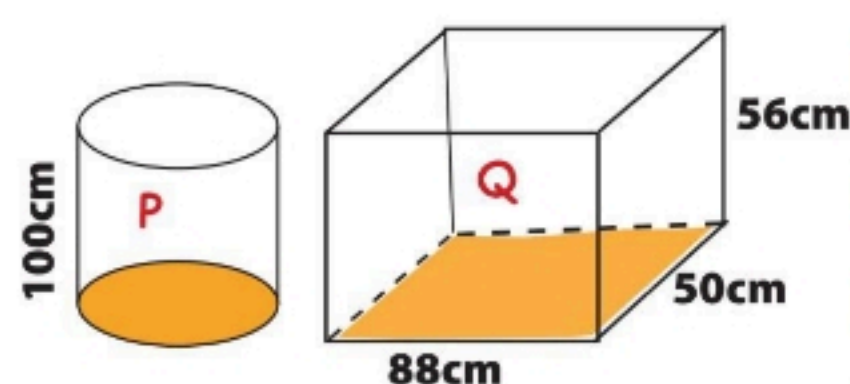
16. The diagram below shows the prime factors of P and Q

What is the value of 'h' if the LCM of P and Q is 180 .

18. Find the next number in the sequence below:

3, 9, 14, 18, 21, ………

19. Simplify: 7k − h − 5k − 4h

20. In a certain club, there are 27men and 13 women. What is the probability that a member selected at random is a man?
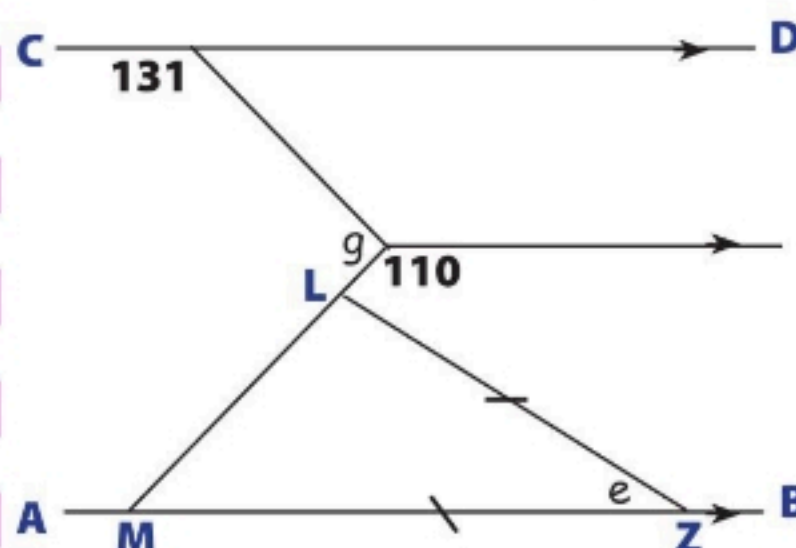
SECTION B

21. The exterior angle of a regular polygon is 36^0 less than the interior angle.

a) How many sides has this polygon?

b) Calculate its interior angle sum.

22. P is a cylindrical tank and Q is a rectangular tank. Both tanks carry the same amount of water when completely full.

a) How many litres of water does tank Q hold?

b) Find the diameter of tank P

23. In a market, a dress costs a third the cost of a pair of shoes while a bag costs sh.50,000 more than the cost of a dress.

If Martha bought 4 dresses, 2 pairs of shoes an one bag and paid sh.380,000 for all the items, find the cost of a pair of shoes.

24. Abalo borrowed some money from a money lender at a simple interest rate $13\frac{1}{3}$% for 2 years and 8 months. How much money did she borrow if she paid back a total amount of sh.1,220,000?

25. In the figure below AB is parallel CD and LMZ is an isosceles triangle.

a) Find the size of angle g.

b) What is the size of angle e

26. Mpaata ran y metres in 30 seconds.

a) Express his speed in km/hr.

b) If y = 400, what was his speed in km/hr?

27. a) Write 26 in binary system.

b) How many times is the value of digit 9 more than the value of digit 6 in the number 895,643?

28. a) Express $^2/_3$ as a recurring decimal.

29. a) Using a ruler and a pair of compasses only, construct a parallelogram PQRS in which QR = 7cm, PQ= 5.5cm and angle PQR = 45^0 .

b) Measure the length of diagonal QS.

30. Tap E takes 20 minutes to fill a tank but tap R takes 30 minutes to fill the same tank with water.

a) How long will the tank take to get full if both taps are opened at the same time?

b) If both taps pour 600litres of water in the tank every minute, calculate the capacity of the tank.

31. The table below shows weights of children in Bala's class.

Mass in kg	63	43	51	57	48
No of pupils	2	m	1	2	1

a) If the mean weight of the children is 52kg, find the value of 'm'.

b) How many pupils weigh below the mean mass?

32. a) Write 750 in Roman numerals.

b) Work out 3 − 4 =   (mode 6)

c) Round off 2653 to the nearest hundred.