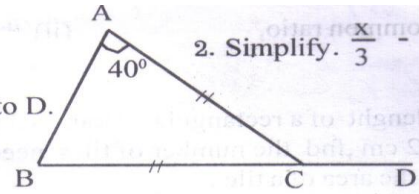
GCE December 2000
Mathematics Paper 1
Duration 1 Hour

1. Write down the following fractions in ascending order $\frac{3}{4}, \frac{4}{5}, \frac{2}{3}$

2. Simplify. $\frac{x}{3} - \frac{x}{6}$

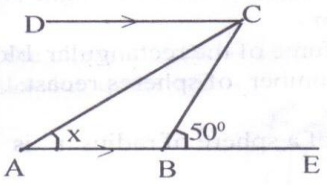
3. In the triangle ABC shown here AC = BC and the side BC is produced to D.
If $B\hat{A}C = 40^0$, find the value of $A\hat{C}D$



4. With a litre of petrol a car can travel an average distance of 12km. Accordingly find the distance it can travel using 18 litres of petrol.

5. Simplify : $\frac{2}{3} \div \left(\frac{1}{2} \times \frac{4}{5}\right)$

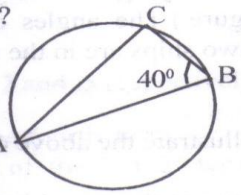
6. In the diagram AE//DC and CA is the bisector of the angle



7. Solve $2(x - 1) + 3 = 5$

8. The ratio of the number of boys to the number of girls in a class is 3 : 1.
If there are 12 girls in the class how many students are there altogether?

9. If $R = \frac{rS}{r - S}$ find the value of R, when r = 12 S = 8



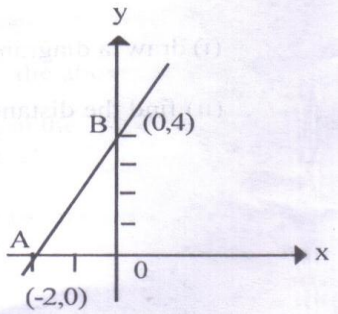
10. In the given diagram, AB is a diameter of the circle.
If $A\hat{B}C = 40^0$ find the value of $B\hat{A}C$

11. Add 1011_{two} and $+1010_{two}$

12. Express 0.07,as a percentage.

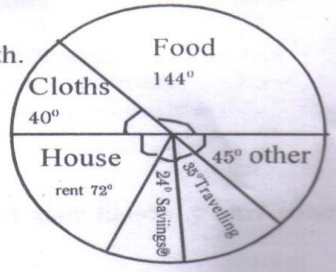
13. Make 'a' the subject of the formula v= u + at

14. If the line AB shown in the figure is expressed by the equation y = mx +c , find the value of c.

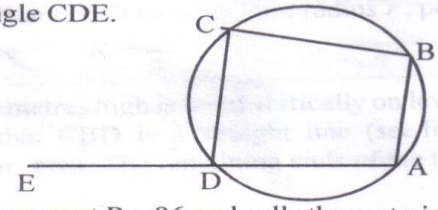


15. A person who obtains a fire insurance for a house estimated at Rs. 800 000 has to pay an annual instalment of $\frac{1}{2}$ % of that value. Calculate this instalment.

16. The pie - chart shows the manner in which Mr. Kumar spent his salary in a particular month.
What fraction of the amount of money spent on food was the money Kumar saved?



17. In the cyclic quadrilateral ABCD shown in the diagram, the side AD is produced to E.
Name an angle equal to the angle CDE.



18. A fruit seller buys a dozen oranges at Rs. 96 and sells them at nine rupees an orange. What is the profit?

19. The marks obtained by eight students for a question paper out of a total of 10 marks are given below.
3 , 6 , 5 , x , 7 , 4, 8, 2 If the mode of the above marks is 5, what mark is represented by x?

20. A person working in a middle - east country sent a cheque for 125 US dollars to his father. The father received Rs. 9781.25 when he cashed the cheque at a bank. What was the value of a US dollar in Sri Lankan rupees on that day?

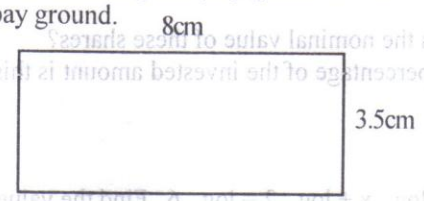
21. Add the constant term to the quadratic expression $x^2 - 6x$, to make it a perfect square and rewrite it. Express it as a perfect square.

22. Six boys take 15 minutes to clean a class room. How many minutes would nine boys take to complete the same work?

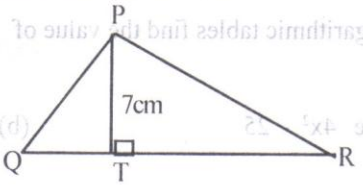
23. Represent on a number line the inequality $-1 < x \leq 4$

24. Amara had to pay 6 equal nonthly instalments of Rs. 500 for an article bought on hire purchase. If she had to pay a total amount of Rs. 4 500 to buy the article, how much did she pay as down payment?

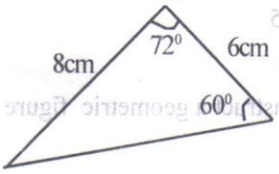
25. Shown in the figure is a rectangular play ground drawn to a scale representing 40 m oya centimetre. Find the length and breadth of the pay ground.

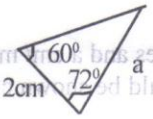


26. The area of the triangle PQR shown in the diagram is $35cm^2$. If PT = 7cm and the length of QR.



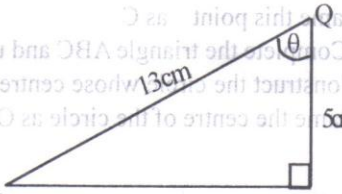
27. Find the value of 'a' in the smaller triangle shown above.





28. A boy starts from point A and walks 20 m due North and reaches point B. Then from B he walks 20 m due East and reaches point C. Draw a rough sketch to show his path. What is the bearing of C from A?

29. Using the data marked on the right angled triangle PQR inthe given diagram write down
(i) the ratio of sin θ (ii) the ratio of cos θ



30. A small sphere **B** of radius 1cm attached to a string is suspended from a fixed point A The sphere is drawn to a side with string taut and then released. Describe tl locus of the centre of the sphere in the resulting motion?