GCE O/L December 2003
Mathematics Paper 1
Duration 1 Hour

1. Add : $82 + 8.2$

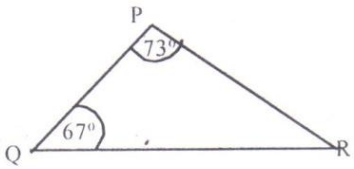
2. Find the perimeter of an equilateral traingle of which the lenght of a side is 3.2 cm.

3. The price of 4 books is Rs.x. What is the price of a book ?

4. Simplify : $8 + (-5)$

5. The height of a tin of paint is 20 cm . What is the total height of 5 such tines in metres when they are kept one on top of the other ?

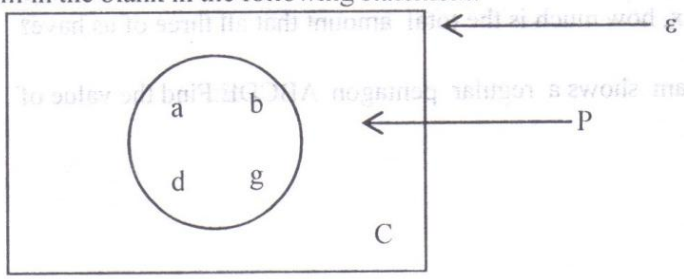
6. Find the magnitude of $P\hat{R}Q$ of the triangle PQR shown below.



7. Factorize : $2ab + 3a$

8. A man bought an article for Rs 250 and sold it for Rs. 300. What is the profit he received?

9. Using the infromation given in the venn diagram, fill in the blank in the following statement.
P' = {.....}



10. If 2:3 = 6:x find the value of x

11. Simplify : $\frac{1}{a-3} + \frac{1}{a+3}$

12. Subtract : $1100_{two} - 101_{two}$

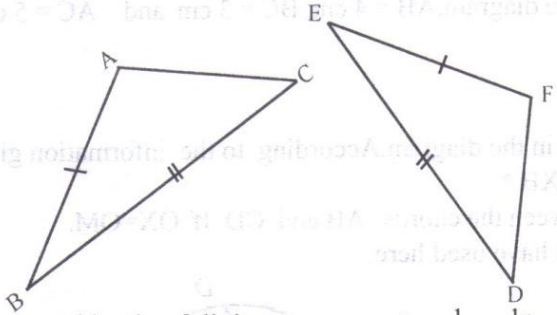
13. Two conditions necessary for the triangles ABC and DEF to be congruent are marked in the given diagram. The following responses were given by four students as the third necessary condition . Out of these, underline all the correct responses

(I) $A\hat{B}C = D\hat{E}F$

(II) $B\hat{A}C = EFD$

(III) $A\hat{C}B = E\hat{D}F$

(IV) $AC = FD$

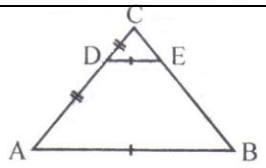


14. What type of a progression is represented by the folloing sequence ? , $\frac{1}{16}$ $\frac{1}{4}$1.... Give resons to justify your answer

15. If $X = \sqrt{5}$ find the value of $X^2 - 2$

16. A and B are two points on a level ground. The bearing of B from A is 128^0. The distance between A and B is 25 metres. Draw a rough sketch showing the above information.

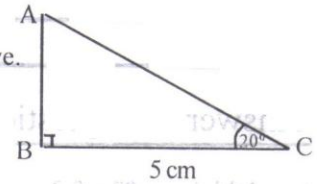
17. Using the data given in the diagram,
(I) name a line segment equal to CE
(II) find the lenght of AB, If DE=8 cm.



18. **Without** using logarithmic tables, evaluate , $\lg 25+\lg 4$.

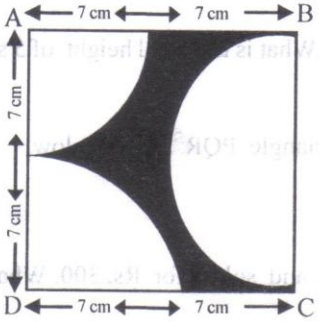
19. X and Y are two integers .If $x+y=19$, find the greatest value that the product xy can have.

20. Using the following information, find the lenght of AB
$\sin 20^0=0.3420$, $\cos 20^0=0.9397$, $\tan 20^0=0.3640$



21. At the beginning of the year 2003,the value of a motor vehicle was Rs. 500000.If the value of the motor vehicle diminishes by 12% within an year , find its value at the beginning of the year 2004 .

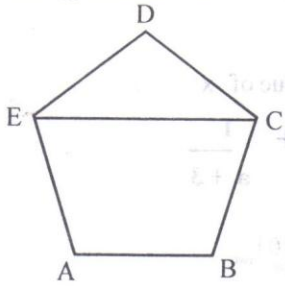
22. A square plate ABCD is shown in the diagram . If two sectors with A and D as centres with A and D as centres and a semi -circle with BC as diameter are cut and removed, find the perimeter of the remaining shaded portion.



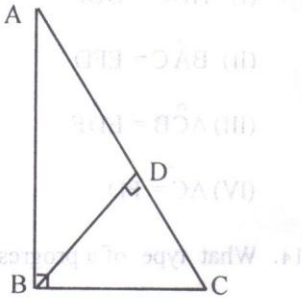
23. Ravi has twice as much money as i have .Seetha has twice the sum of money that both of us have .If the amount of money i have is x, how much is the total amount that all three of us have?

24. The diagram shows a regular pentagon ABCDE.Find the value of

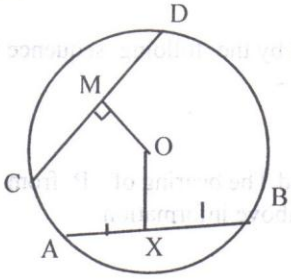
(i) $E\hat{D}C$
(ii) $D\hat{E}C$



25. (I) In a right angled triangle ,if the lenght of two sides that form the right angle are a and b, write down an expression for the area of the triangle.
(II) In triangle ABC shown in the diagram,AB = 4 cm, BC = 3 cm and AC = 5 cm. Find the lenght of BD.

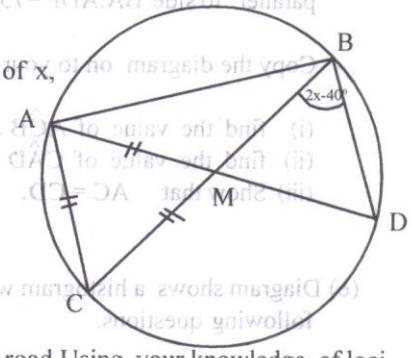


26. A circle with centre O is shown in the diagram.According to the information given , ,
(i) What is the magnitude of OXB ?
(ii) Write down the relation between the chords AB and CD, If OX=OM.
(iii) State any **theorem** that you have used here.

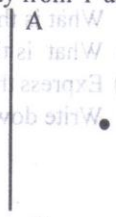


27. Sunil started a business investing Rs 20000. After six month ,Nimal joined the business by investing Rs.25000.At the end of one year after starting the business they received a profit of Rs 13000.Is it fair to divide the profit equally between the two of them?
In order to justify your answer ,clarify how the profit should be divided.

28. In the given diagram ,ACM is a equilateral triangle.If $\hat{CBD} = 2x\text{-}40^0$,find the value of x,



29. The sketch below shows a straight road AB and a tree P, 9 metres away from the road.Using your knowledge of loci, shows in the diagram the two points and how to obtain their locations so that they are 4 metres away from P and 6 metres away from the road AB.



30. The lenght of a side of a certain square is twice the lenght of a side of a smaller square?
(I) Is the area of the larger square twice the area of the smaller square ?
(II) Give an example to justify your answer.