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உவா மாகாண கல்வித் திணைக்களம்
Uva Provincial Department of Education

PRACTICE TEST - 2023(2024)

Grade 11	Mathematics - I	Time : 02 hrs.

Part A

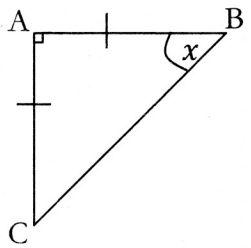
- Answer all the questions on this paper itself.

1. Find the first approximation of $\sqrt{54}$ if $7.3^2 = 53.29,\ 7.4^2 = 54.76,\ 7.5^2 = 56.25$

2. The area of a circular metal sheet is $88m^2$. Find the area of a sector which was cut out from the sheet if the angle of sector is 45^0.

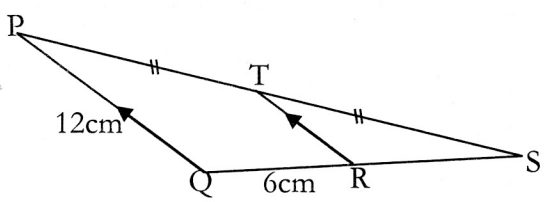
3. Write in logarithm form. $10^{0.9030} = 8$.

4. In the right angled triangle AB=AC. Find the value of x.



5. A bag contains identical red balls and blue balls. The total number of balls is in between 10 and 20. The probability of randomly selected ball being a red is $\frac{5}{8}$. Find the number of blue balls in the bag.

6. In the figure , QR=6cm and PQ=12cm. Find

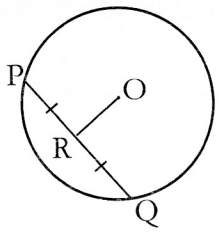


   i. the length of QS

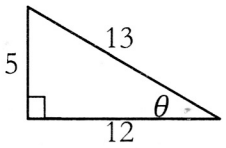
   ii. the length of RT

7. Solve. $\frac{2}{x} - \frac{1}{3x} = \frac{5}{9}$

8. The radius of the circle with center O is 5cm. The midpoint of the chord PQ is R. OR= 4cm. Find the length of the chord PQ.

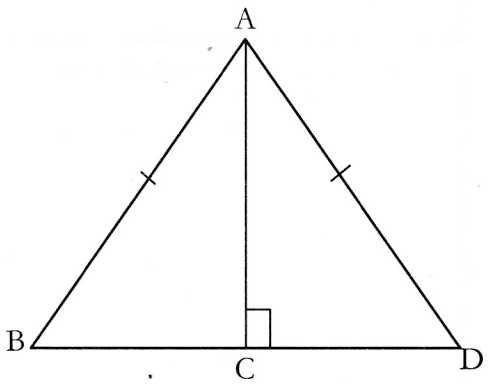


9. According to the given data, find the value of $\frac{\sin\theta}{\cos\theta}$.



10. Find the L.C.M of $4x^2, 6xy^2, 8x$

11. According to the given figure fill the blanks.



In the triangles ABC and ACD

AB=AD (Given)

AC = ……..(……)

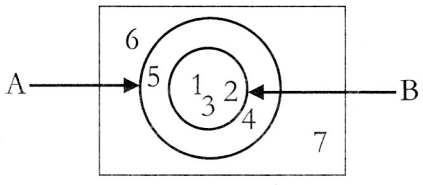
$A\hat{C}B = A\hat{C}D$ (*Given*)

$ABC\Delta \equiv ACD\Delta$ (……)

12. Write the positive integral solution of $(2x + 3)(x - 4) = 0$

13. Factorize. $5x^2 + 7x - 6$

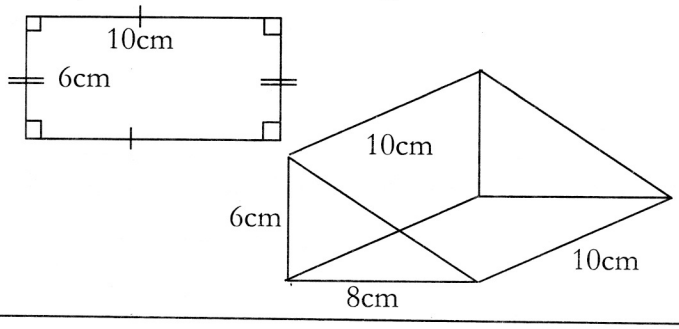
14. According to the given Venn diagram , put a √ if the following are correct, if they are incorrect put a × .



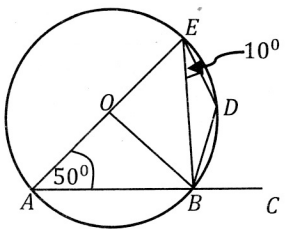
$A' \cup B' = B$		$A \cap B = B$	
$A \cup B = A$		$A \cap B = A$	

15. The base radius of a right circular cylinder is 7cm. The curved surface area is 1540cm^2. Find the height of the cylinder. (Curved Surface area of a right circular cylinder with base radius r and height h is $2\pi rh$)

16. A rectangular face of the given prism is drawn with the measurements in the following. Draw the other two rectangular faces with the measurements.



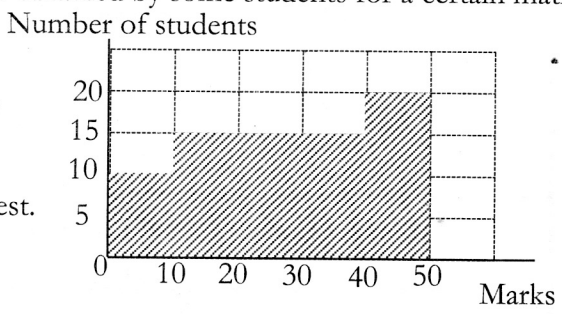
17. The points A,B,D,E are on the circle with centre O. AB is produced to C .Find the value of $C\hat{B}D$.



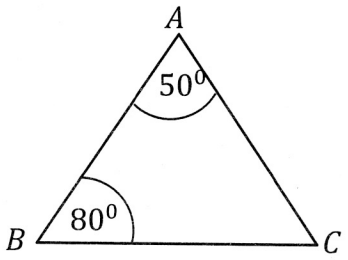
18. The following histogram represents the marks obtained by some students for a certain maths test. Find

i. The number of students belonging to10-40.

ii. The total number of students faced to the test.



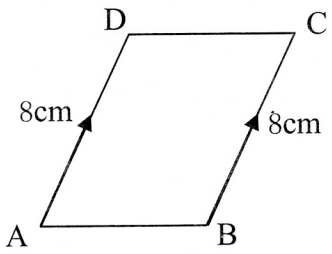
19. Write two equal sides in the given triangle.



20. According to the figure, write,

i. an angle equal to $A\hat{B}C$

ii. a value for $A\hat{B}C + B\hat{C}D$



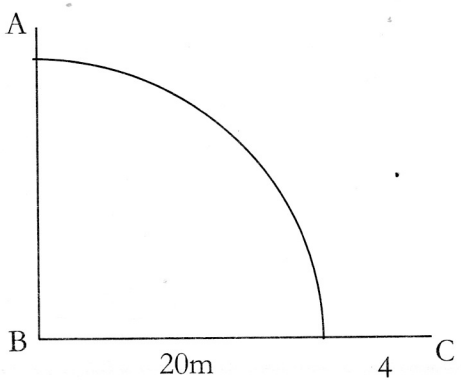
21. Write the equation of the straight line which is going through the points (0,3) and (2,7) in the form $y = mx + c$.

22. 9 men can complete a certain task in 5 days. After working 4 days 6 men did not come to the work. How many extra days will it take to complete the remaining task?

23. Simplify. $\frac{5x^2}{7y^3} \div \frac{15x^3}{14y^2}$

24. The first term and the common ratio of a geometric progression are 8 and 2 respectively. Write its 7^{th} term as a power of 2.

25. AB and BC are two walls. It is needed to fix a light post equidistant to two walls and 20 m away from B. Mark the place of the light post as X using the knowledge of loci.



Part B

- **Answer all the questions on this paper itself.**

1. The Samanala garment factory issued $\frac{1}{4}$ of the clothes as children's clothes and the remaining as adults' clothes to the market in a certain day.

   i. What is the fraction of adults' clothes from the total number of clothes?

   ii. If $\frac{3}{5}$ of the adults' clothes were women's clothes, find the fraction of women's clothes from the total.

   iii. If they issued 150 adult men's clothes on that day, find the total number of clothes issued by the factory on that day.

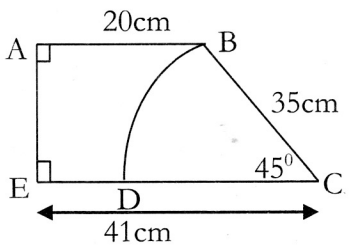
   iv. The cost of a children's cloth is Rs. 1200 and the cost of an adult cloth is Rs. 1800.Find the total cost of clothes which were issued to the market.

2. The following figure ABCE represents a wooden trapezium shaped name board which consists of a sector with the center C on it. The sector is coloured in yellow and the remaining part is coloured in green. The perimeter of trapezium ABCE is 124cm.

   i. Find the length of AE.

   ii. Find the length of BD.

   iii. Find the area of yellow coloured part.



   iv. Another sector named CPQ with the center C inside the yellow coloured part is going to colour in pink. The arc length of this new sector is 5.5 cm less than the DB arc length. Find the radius of this pink coloured part.

3. (a). A certain financial company charges 8% annual interest rate and they calculate the interest according to the simple interest method.

i. Mr. Silva got RS. 600 000 loan from this company. Find the interest that should be paid by him for a year.

ii. He settled the loan after few years by paying Rs.744 000. Find the time period that he got to settle the loan.

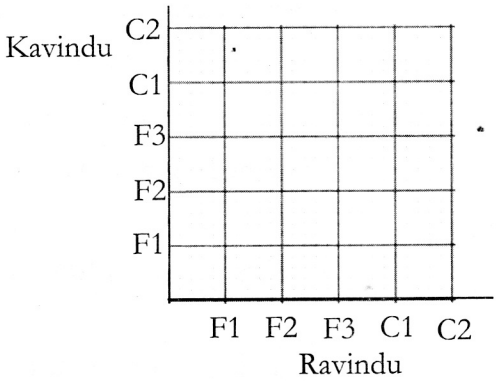
(b) The cost of a vehicle is Rs. 360 000. The total cost of this vehicle is Rs. 504 000 after paying the customs duty.

i. Find the customs duty he had to pay.

ii. Calculate the duty percentage.

4. (a) In a canteen of a certain school has 3 types of fruit juice, 2 types of ice creams and their prices are same. Ravindu and Kavindu each bought only one type of these items.

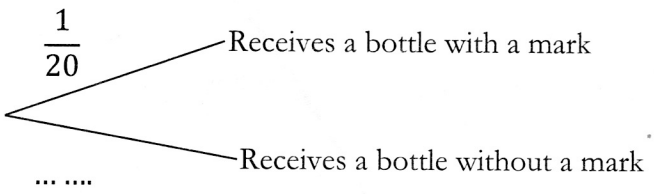
i. Represent the sample space of buying fruit juice and ice cream in the grid. (Here F1, F2 and F3 represents the types of Friut Juice and similarly C1 and C2 represents the types of Ice Cream respectivly.)



ii. Encircle the event of both are buying the same type and find its probability.

(b) In this canteen, a mark is printed on only one fruit juice bottle among each and every 20 fruit juice bottle of any type. Ravindu and Kavindu got to know that when someone receives a fruit juice bottle with the mark can receive another fruit juice bottle free. So they decided to buy fruit juice.

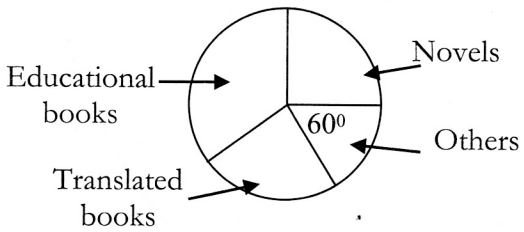
i. Complete the following tree diagram to represent that Ravindu receives a bottle with a mark or not.



ii. Expand the above tree diagram to represent that Kavindu receives a smiling face or not.

iii. According to that find the probability of both are receiving a fruit juice free.

5. (a) The following pie chart represents the information about books which were sold during a month in a certain book shop.

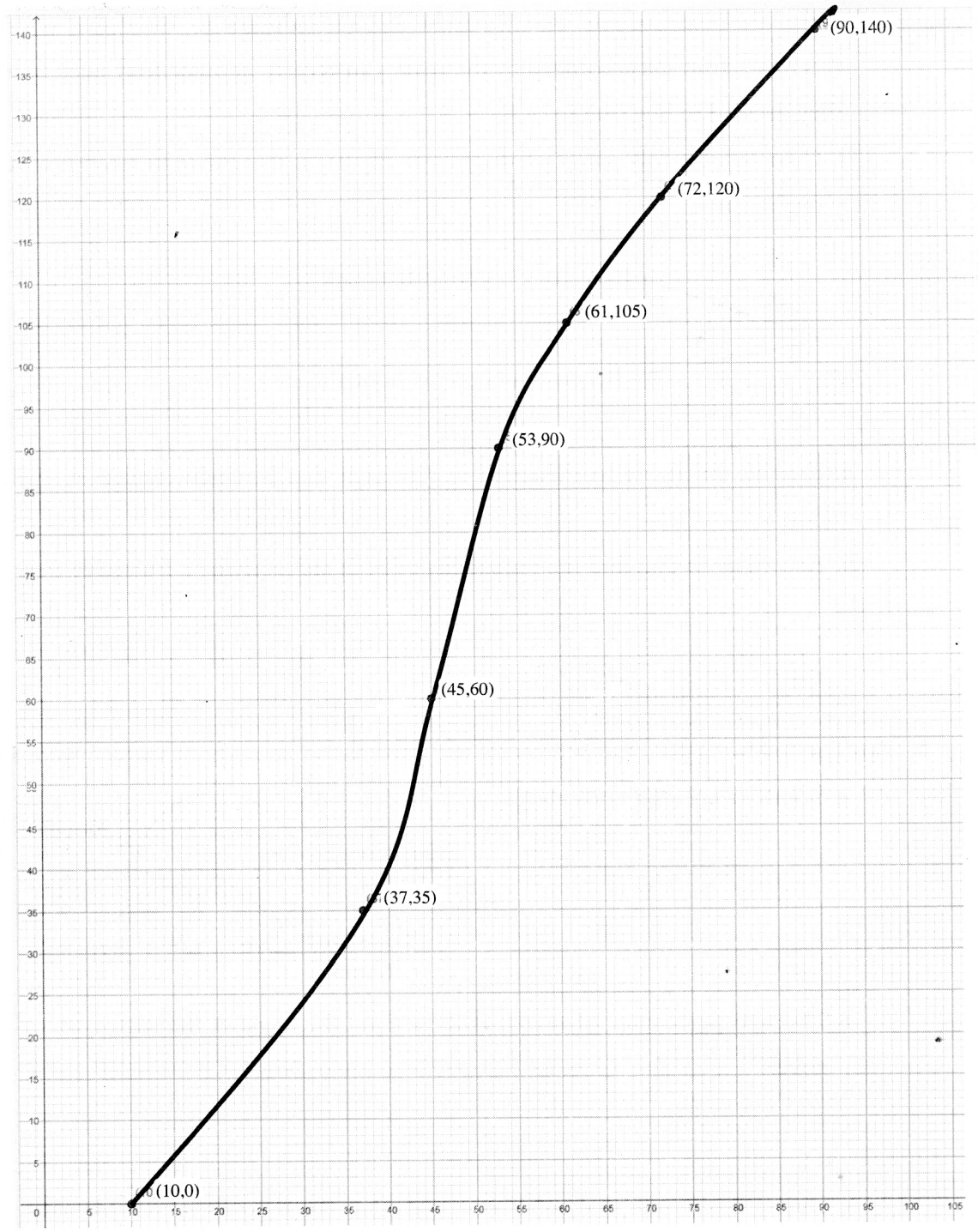


i. The sold percentage of novels is 25%. Find the angle at the sector which represents novels.

ii. During this month, the number of sold educational books is two times the number of sold translated books. Find the angle of the sector which represents translated books.

iii. If they sold 175 translated books, find the no of novels that sold.

(b)



Find,

i. median

ii. inter quartile range

of above marks.

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ஊவா மாகாண கல்வித் திணைக்களம்
Uva Provincial Department of Education

PRACTICE TEST - 2023(2024)

Grade 11	Mathematics - II	Time : 03 hrs.

Extra Reading Time 10 mins.

Consider the following:

- Answer 10 questions selecting 5 questions from part A and 5 questions from part B.
- Each question carries 10 marks. When answering the questions write the relevant steps and accurate units.

The volume of a sphere with the radius r is $\frac{4}{3}\pi r^3$, and the volume of a cone with radius r and the height h is $\frac{1}{3}\pi r^2 h$. $\pi = \frac{22}{7}$

Part A

01. An incomplete table prepared to draw the graph of the function $y = -x^2 - 2x + 3$ in the range of $-4 \leq x \leq 2$

x	-4	-3	-2	-1	0	1	2
y	-5	0	3	.....	3	0	-5

i) Find the value of y when X= -1

ii) Draw the graph of the function using a suitable scale.

iii) Write the coordinates of the turning point.

iv) Describe the behavior of the function in the range $-1 \leq x < 1$

v) The above graph is displaced 2 units downward along y axis. Then write the new function of the graph in the form $y = -(x + m)^2 + n$

02. Saman's father is a owner of a bus. Even though he is the owner, he is working as the conductor in his own bus. The bus is running 25 days in every month. In each and every day Saman's father gives the remaining coins that he collects from the passengers to Saman. Then Saman decided to save these coins by putting them in to a till. The following table represents how Saman saved the money in a certain month. (Here, 100-200 means greater than 100 and less than or equal 200)

The amount saved (Rs.)	0-100	100-200	200-300	300-400	400-500	500-600	600-700
Number of days	1	4	5	7	5	2	1

i) What is the possible maximum amount of money that can be collected in maximum number of days?

ii) Find the mean amount of money saved by Saman per day.

iii) Hence find the expected total amount of money that can be saved during a year.

iv) From these saved amount of money, Saman gave money to his father for the insurance of the bus. The remaining amount is exactly enough to buy a mobile phone worth Rs. 38 950. Find the value of the insurance of the bus.

03. a) 2 masons and 3 helpers take 8 days to build up a wall completely. To pay their salaries, Rs. 122 000 was spent. The daily wage of a helper is Rs. 750 less than the daily wage of a mason.

i) Find the total amount of money paid for masons and helpers in a day.

ii) Construct a pair of simultaneous equation by taking the daily wage of a mason as Rs.x and the daily wage of a helper as Rs. y.

iii) By solving that simultaneous equations, find the daily wage of a mason and the daily wage of a helper separately.

b) Simplify. $\frac{1}{a^2-b^2} - \frac{1}{(a-b)^2}$

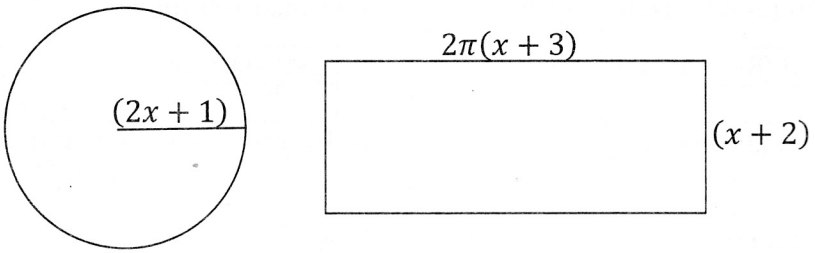
04. a) The following chart represents an advertisement. Mr. Dhanawardhana who is expecting to invest money in the share market observes this advertisement. Then he decided to select a company from these to invest money. By using the calculations, find which company is more beneficial to invest his money.

Company	The cost of a share (Rs.)	Dividend for a share (Rs.)
ABC	50	5
JKL	40	4.75

b) Mr. Dhanawardhana invested Rs. 4000 000 in company JKL and after one year he received his annual dividend income. He spent this dividend income as the down payment to buy a Television worth Rs. 92 200. Then he promised to pay the balance by 12 equal monthly installments under 12% annual simple interest rate. The interest is calculated according to the reducing loan balance method.

Show that the total amount of money that should be paid for Television after paying the down payment is **exceed** the annual dividend income of one year.

05. The following figures represent a circle with the center $(2x + 1)$ and a rectangle with the length of $2\pi(x + 3)$ and the breadth of $(x + 2)$. The areas of these two plane figures are equal.



i) By considering the relation of the areas of above two figures, show that the x satisfies the equation $2x^2 - 6x - 11 = 0$.

ii) Find the value of x by solving it. (Consider $\sqrt{31}$=5.56)

iii) Find the radius of the circle.

06. The figure X represents a Carrom board. ABCD is a square shaped part with the side length 74cm. Here, E and F are the midpoints of the sides AD and BC. On this Carrom board there is a disc in P. After hitting to the disc it goes to Carrom coin K which is situated 40 cm away from P with the bearing of $28^{o}58'$ and then K is falling into the pit D. The figure Y represents a sketch regarding to this information.

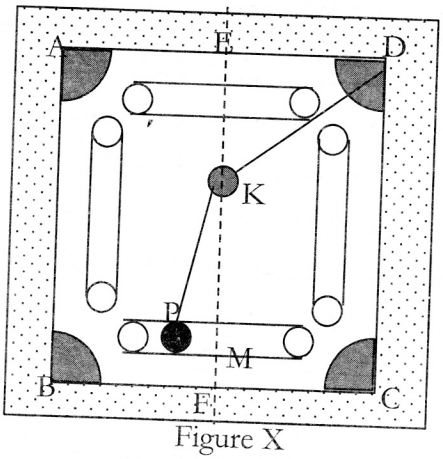


Figure X

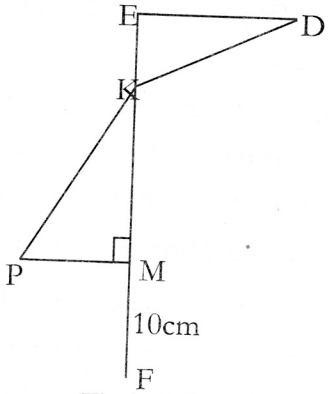


Figure Y

i) Copy the figure Y in your paper and insert the above information in it.

By using the trigonometric tables,

ii) Find the distance of KM to the nearest whole number and obtain the length of KE.

iii) Find the value of $E\hat{K}D$.

Part B

07. The students who have completed the road race of a sports meet in a certain school are received the marks as follows.

- The marks for the 1st place is 225.
- Then after every student who has completed the road race received 3 marks less than the previous student who has completed the race.
- There are **no students** with the same marks.

i) Write the marks obtained by 1st, 2nd and 3rd respectively.

ii) Find the marks obtained by the student who got 11th place.

iii) Find the total sum of the marks of first 22 students.

iv) 15 students who are from Wijaya house have completed the road race successfully. The places which they have got such as 1st, 5th, 9th,13th,... are the terms of an arithmetic progression. Find the total marks that can be received by the students in Wijaya house.

08. Use only a straight edge with cm/mm scale and a pair of compasses for the following constructions. Show the construction lines clearly.

i) Construct the triangle ABC such that $AB = 7cm$, $A\hat{B}C = 30^{0}$ and $B\hat{A}C = 90^{0}$.

ii) Produce the side AC to P such that $AP = 8cm$. Construct the bisector of $B\hat{C}P$. Mark the point D on the angular bisector as AC=CD.

iii) Construct the perpendicular bisector of BC. Mark the intersection point of perpendicular bisector and BD as E, and also name the intersection point of perpendicular bisector and BC as F. Give reasons to $A\hat{C}D = D\hat{E}F$.

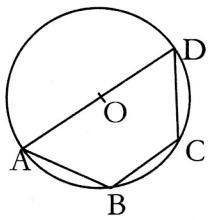
09. In the triangle ABC, AB=AC. The midpoint of AB is P. The straight line which is drawn parallel to AC through P intersects BC at Q. AC is produced to R such that BP=CR. PR and BC are intersected at O.

i) Show that $\Delta POQ \equiv \Delta RCO$.

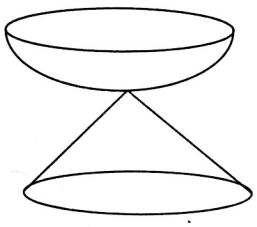
ii) Show that OB $= \frac{3}{4}$ BC.

iii) Show that $CRQP$ is a parallelogram and show that 2 (area of APQC)=3(area of CRQP).

10. ABCD is a cyclic quadrilateral with centre O. The tangent drawn to the circle at B intersects the produced DA at F and intersects the produced DC at E. And also AB=BC and FD//BC. Copy the given figure in your paper and include above data. Show that AC is the angular bisector of $B\hat{A}D$. Show that ABF is an isosceles triangle. Show that $B\hat{C}E = 60^0$.



11. The figure in the side represents an ornament which was made by using a solid hemisphere and a right circular solid cone. The radius of the hemisphere is 'a', the base radius of the cone is 'a' and the height of cone is two times its base radius.



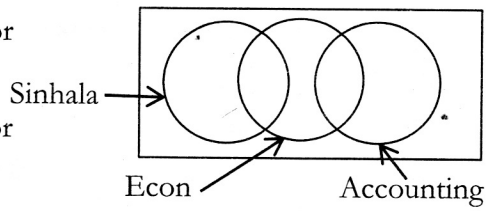
i) Show that the volume of the ornament is $\frac{4}{3}\pi a^3$.

ii) Calculate the volume of the ornament to the nearest second decimal place by taking $\pi = 3.142$ and $a = 0.936$ using logarithm tables.

iii) Hence find the radius of a solid sphere which has the volume of 8 times than the above ornament.

12. The following Venn diagram shows the information about the students who got A passes for Sinhala, Econ and Accounting for a certain test done in Advanced Level section of a School.

- The number of students who got A passes for Accounting is 24.
- The number of students who got A passes for Sinhala is 17.



- The number of students who did not get A passes for at least one subject is 19 more than the number of students who got A passes for Sinhala only. Copy down the given Venn diagram in your paper and insert above information in it.

i) If 50 students got A passes at least for one subject, find the number of students who got A passes for Econ only.

ii) The number of students who got A passes for both Econ and Sinhala only is 6. find the total number of students represent in Venn diagram.

iii) If the number of students who got A passes for only one subject is 36, find the number of students who got A passes for Econ.

iv) The students who got A passes at least for two subjects eligible for the Trainee Assistant bankers for 6 months. Find the number of students eligible for the Post of Trainee Assistant bankers.

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පහසුවෙන් ජයගන්න

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pesuru Prakashana Private Ltd. | Akura Pilot | සමනල දැනුම | සතර

පෙර පාසලේ සිට උසස් පෙළ දක්වා සියළුම ප්‍රශ්න පත්‍ර,
කෙටි සටහන්, වැඩ පොත්, අතිරේක කියවීම් පොත්, සඟරා
සිංහල සහ ඉංග්‍රීසි මාධ්‍යයෙන් ගෙදරටම ගෙන්වා ගැනීමට

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