සියලුම හිමිකම් ඇවිරිණි/ முழுப் பதிப்புரிமையுடையது / All Rights reserved

වයඹ පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව
வடமேல் மாகாணக் கல்வித் திணைக்களம்
Provincial Department of Education - NWP

Grade 10	Second Term Test 2024	32 E I

Mathematics I

Name ..... Time : 02 hours

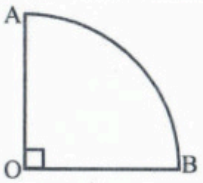
- Answer all the questions on this paper itself.
- Each question carries 02 marks in part A and 10 marks for each question in part B.

Part A

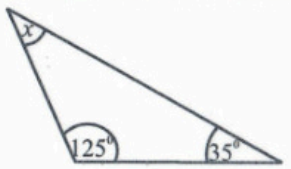
01. A building of assessed value of Rs. 75 000, is charged annual rates of 8%. Find the rate that has to be paid for a year.

02. Solve. $\frac{6}{x} - 1 = 2$

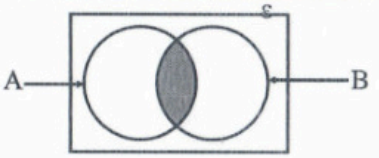
03. If the arc length of AB is 22cm, Find the radius of the sector.



04. Find the vaule of x.

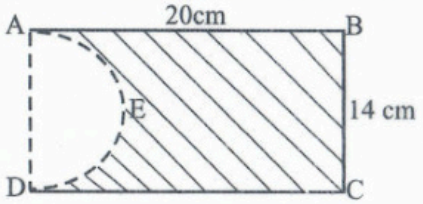


05. Write the shaded region of the given venn diagram in set notation.



06. The price for the number of units of water in a month of a house is Rs. 800. If 18% VAT is charged for that, find the value of the water bill with the tax for that month.

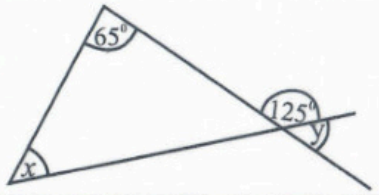
07. The sector AED which is equal to half of a circle of circumference 44cm is cut off from a rectangular lamina ABCD. Find the perimeter of the shaded portion.



08. Fill in the blanks.
If a side of a triangle is produced, the ..... angle so formed is equal to the sum of the two ..... opposite angles.

09. Simplify. $\frac{1}{2x} + \frac{1}{4x}$

10. Using the information given in the figure,
(i) Find the value of x.
(ii) Find the value of y.



11. Marks obtained by 9 students for an assessment are given below.

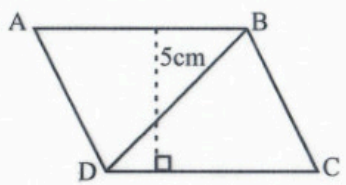
4, 3, 2, 3, 4, 1, 5, 3, 2
Find it's median mark.

12. Find the LCM of following algebraic terms.
$2ab^2$, $6a^2b$

13. Fill in the blank and find the value of $\sqrt{12}$ to the first approximation.

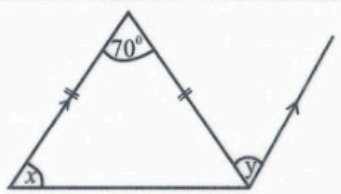
3.4 x 3.4 = 11.56 and 3.5 x 3.5 = ...

14. In the parallelogram shaped lamina ABCD , the area of the triangular part ABD is 25 cm^2. If the perpendicular height between the sides AB and DC is 5cm, find the length of DC.

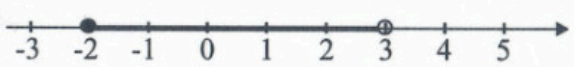


15. Factorize. $x^2 + x - 30$

16. Using the information given in the figure, find the value of x and y



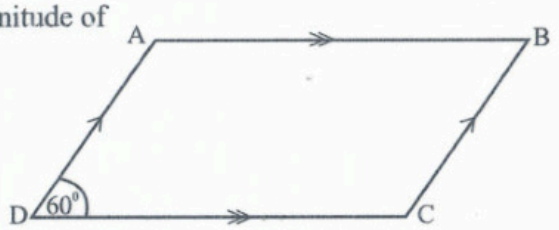
17. Write down the inequality represented on the following number line.



18. Using the information given in the figure, find the magnitude of

(i) $A\hat{B}C$

(ii) $D\hat{A}B$



19. Simplify. $1\frac{1}{2}$ of $\left(\frac{1}{6}+\frac{1}{3}\right)$

20. It takes 10 minutes to fill $\frac{1}{4}$ of a tank of capacity 2000l with water using a pipe which water flows at a uniform rate. Find the rate at which water flows through the pipe.

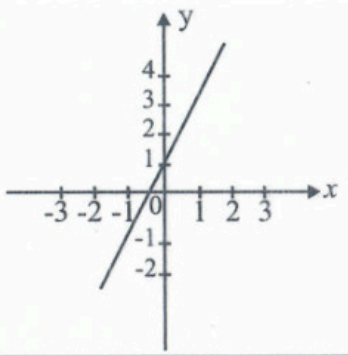
21. Put "✓" mark in front of each correct statement.

(a) The sides opposite equal angles of a triangle are equal. ☐

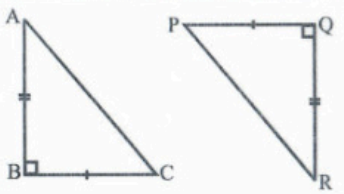
(b) The area of a parallelogram is bisected by each diagonal. ☐

(c) In a parallelogram the opposite angles are supplementary. ☐

22. The gradient of the given straight line is 2. Write its equation.

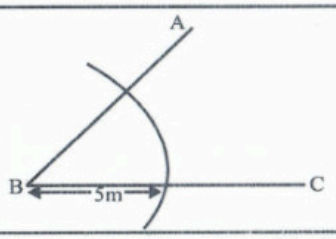


23. Write the case of congruency of the triangle ABC and the triangle PQR.



24. In a bag there are 2 red beads and a blue bead which are same in size and shape. A bead is taken out from it randomly. Find the probability of obtaining a red bead.

25. A, B and C are three places on a level ground. Sketch the construction lines that is necessary to find the point 'P' which is 5cm away from B and equidistant to AB and BC.



Part B

01. Mr. Sampath kept $\frac{1}{8}$ of the income from the poultry farm in the last month for home meals, four times like that amount for animal food, $\frac{2}{3}$ of the remaining amount for other expences and deposited the rest in the bank acccount.

i. What fraction of the total income is kept for animal food?

ii. Denote the amount kept for other expences as a fraction of the total income.

iii. If the amount kept for other expences is Rs. 40 000, then find the total income received from the poultry farm in the last month.

iv. Due to the rise in the price of animal food, Rs. 15 000 were also spent from the amount allocated for other expences in addition to the amount allocated for the above animal food. Like that, find the total amount spent on animal food.

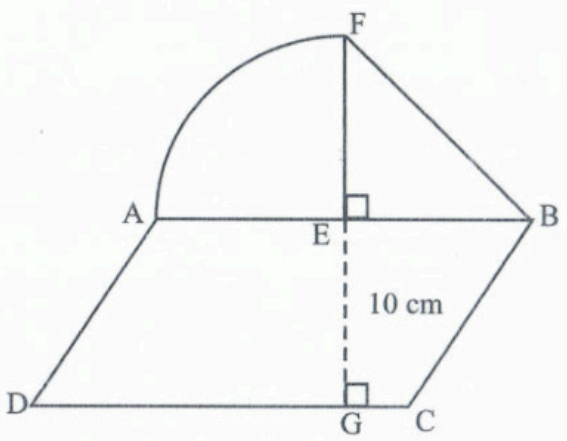
---

02. The following figure shows a badge made of a thin metal plate. ABCD is a parallelogram of it. The sector AEF and the right angled isosceles triangle BEF are on the side AB. EG = 10cm and the area of the parallelogram ABCD is $280cm^2$.

(i) Find the length of the side AB.

(ii) Find the arc length of the sector.

(iii) Find the area of the triangular part.



(iv) How much is the area of the sector greater than the area of the triangular part?

03. It takes 10 men 9 days to paint the walls of a school. In the first 3 days, 12 people participated and in the next 2 days 14 people participated in this task.

(i) Find the number of man days required for painting the walls in this school.

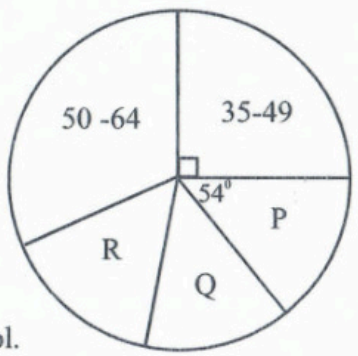
(ii) How many man days were remained at the end of the first 3 days?

(iii) How many man days were completed within first 5 days?

(iv) If this work is to be completed in 7 days, find the number of men to be employed in the last two days?

04. Following is an incomplete table and a pie chart showing the marks obtained for mathematics in the first term test of grade 10 students in a school.

Class interval	No of students
0- 34	.....
35 - 49	10
50 - 64	12
65 - 74	6
75 - 100	.....



(i) Find the number of grade 10 students in this school.

(ii) Find the central angle of the sector that represents the students in the interval 50 - 64.

(iii) Which interval of marks is represented by the sector named as P?

PAST PAPERS WIKI

(iv) If the number of students in the interval 0 - 34 is twice the number of students in the interval 75 - 100, then fill in the blanks in the table.

(v) In the second term , five new students were admitted to this grade and all of them have scored above 75 for mathematics in the first term test. Accordingly find the magnitude of the central angle of the interval 75- 100 in the new pie chart prepared with reference to the marks of the first term test for mathematics.

05. In a vessel there are 2 red pens, 3 green pens and 4 blue pens which are equal in size and shape. Awanthi take out a pen from it randomly.

(i) Write the sample space.

(ii) Find the probability that she gets a green pen.

(iii) Find the probability that the pen she took is not a blue pen.

(iv) Find the probability that she gets either a green or a blue pen.

(v) Awanthi said that the pen she got was a red pen and she kept it. Then Nimanthi also randomly takes out a pen from that vessel. Find the probability that Nimanthi gets a blue pen.

සියලුම හිමිකම් ඇවිරිණි/ முழுப் பதிப்புரிமையுடையது / All Rights reserved

වයඹ පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව වැඩිමහල් ගාකාණ කල්විත් තිණෙක්කළම්
Provincial Department of Education - NWP

Grade 10	Second Term Test 2024	32 E II

Mathematics II

Time : 03 hours

Additional Reading time: 10 minutes

Use additional reading time to go through the question paper, select the questions and decide on the questions that you give priority to in answering.

Instructions:

- Answer 10 questions selecting 5 questions from Part A and 5 questions from Part B.
- Write the relevant steps and the correct units in answering the questions.
- Each question carries 10 marks.

Part A
Answer 05 questions only.

01. (i) A person who borrows a certain amount of money from a financial institution at a simple interest rate of 12% per annum has to pay Rs. 54 000 as interest at the end of 3 years. Find the amount he borrowed.

(ii) He spends half of the loan amount to renovate the house. Then he rents out that house at the rate of Rs. 10 000 per month. He gets the rent amount for one year at once. After that he deposits that rental amount and the rest of the loan amount in an another financial institution at 10% annual simple interest. Show that the interest he receives after 3 years from the deposit is greater than the interest payable on the loan amount.

02. An incomplete values of table prepared to draw the graph of the function $y = x^2 - 3$ is given below.

x	-3	-2	-1	0	1	2	3
y	6	1	-2	.....	-2	1	6

a) (i) Find the value of y when $x = 0$

(ii) Using the scale of 10 small divisions as one unit along both x axis and y axis, draw the graph of the above function.

b) Using the graph you drawn ,

(i) Write the equation of the axis of symmetry.

(ii) Write the range of values of x which the function is negative.

(iii) When the above graph is shifted upwards by 2 units along the x axis, write the coordinates of the turning point of the graph obtained.

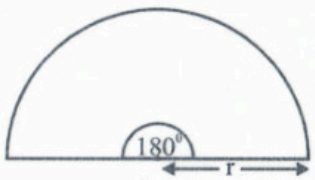
03. 6 Apples can be bought to the amount which is needed to by 10 oranges. It is spent Rs. 420 to buy 2 oranges and 3 apples.

(i) By taking the price of an orange as Rs. x and the price of an apple as Rs. y, build up a pair of simultaneous equations.

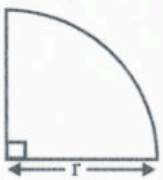
(ii) Find separately the price of an orange and the price of an apple by solving the above pair of equations.

(iii) If buying equal number of oranges and apples for Rs.500 gets a balance of Rs.20, Find the number of oranges that can be bought.

04. (a) and (b) are two sectors of radius r. The difference between their areas is $\pi(r+3)cm^2$. Show that r satisfies the quadratic equation $r^2 - 4r - 12 = 0$ and by solving it show that $r < 7cm$.



(a)



(b)

05. The following table shows about the amount of rice sold in a shop during 30 days.

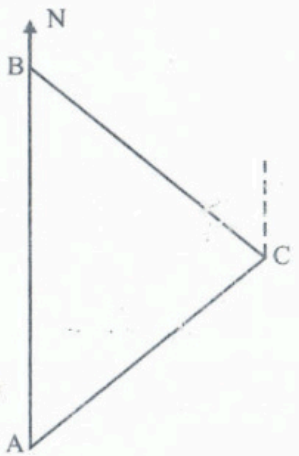
Amount of rice sold in a day(kg)	6	7	8	9	10	11	12
Number of days	2	3	6	10	5	3	1

(i) Write the amount of rice sold in most number of days.

(ii) Find the mean amount of rice sold in a day to the nearest kg.

(iii) The shopkeeper says that 1000kg of rice stored in the shop is enough for three months. Considering the mean amount of rice sold per day, show with reasons that the shopkeeper's statement is true or false.

06. A,B,C are three places on the level ground. B is located north of A with the distance of 50m. The bearing of C from A is 050^0 and C is located 40m away from A. The bearing of C from B is 140^0



(i) Copy the figure on to your answer sheet and include the above information in it.

(ii) Find the magnitude of $B\hat{C}A$.

(iii) Find the bearing of A from C

(iv) Using the scale of 1:1000, draw the scale diagram of the above figure

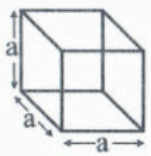
(v) Using the scale diagram find the actual distance of BC.

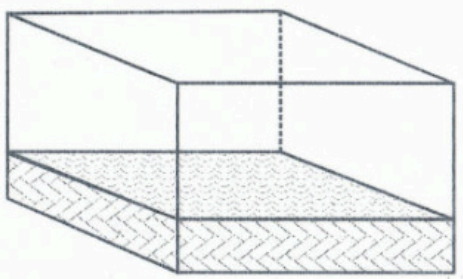
Part B
Answer 05 questions only.

07. In a number sequence with the general term of $T_n = 25-4n$
(i) Write the first two terms.
(ii) Find the common difference.
(iii) Find the 6^{th} term.
(iv) Which term is -35?
(v) Show that -20 is not a term of this number sequence.

08. Using a straight edge of cm/mm scale, a pair of compasses and drawing construction lines clearly, do the following construction.
(i) Construct the straight line segment AB=7cm and construct a perpendicular to AB at A.
(ii) Construct the $A\hat{B}C = 45^0$ and complete the triangle ABC.
(iii) Construct the perpendicular bisector of BC and name the intersection point of it and BC as O.
(iv) Construct the angle bisector of $A\hat{B}C$ and name the intersection point of it and the above perpendicular bisector as P.
(v) Construct the circle by taking P as the centre and OP as the radius . Then measure and write the length of OP.

09. (a) A cuboidal shaped water tank of base area $150cm^2$ is filled with water up to 12cm height. After immersing 6 solid metal cubes of side length a cm, in the water of the above tank, the water level is goes up to 17cm. Find the side length of a solid cube.

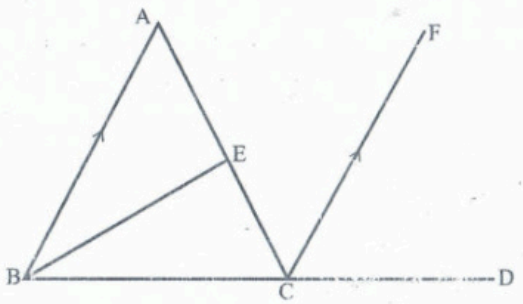




(b) Find the value using the logarithmic tables.

$$\frac{94.28 \times 5.2}{234.1}$$

10. In the isoscelese triangle ABC, AC=BC. The side BC is produced up to D. The angle bisector of $A\hat{B}C$ is BE and BA//CF.
(i) Show that $A\hat{C}F = 2\,A\hat{B}E$
(ii) If $A\hat{C}F = 60^0$ and AC=8cm,
Find the length of AB by giving reasons.

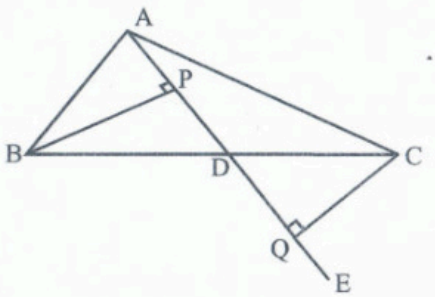


11. In the triangle ABC, the mid point of BC is D. The side AD is produced up to E. The perpendiculars drawn from B to AD and from C to produced AD are BP and CQ respectively.

(i) If $D\hat{A}C = 30^0$ and $A\hat{C}D = 40^0$, find the magnitude of $D\hat{C}Q$.

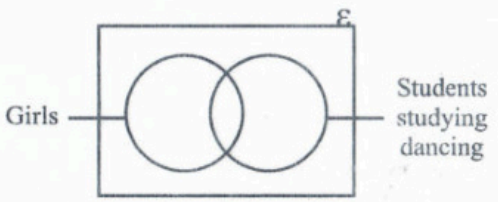
(ii) Show that $\Delta BPD \equiv \Delta CQD$

(iii) Show that BQCP is a parallelogram.



12. In a small school, the total number of students in grade 6-11 is 60. 40 of them are girls. The number of girls studying dancing is 25. The number of students who do not study dancing is 27.

(i) Copying the given venn diagram on to your answer sheet, insert the above data in it.



(ii) Find the number of boys who studying dancing.

(iii) If all the girls in the school are selecting dancing, draw the venn diagram to represent that information and insert the data in it.

PAST PAPERS WIKI
WWW.PastPapers.WiKi

Downloaded From Past Papers WiKi - Sri Lanka's Largest Past Paper Bank