බස්නාහිර පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව
மேல் மாகாணக் கல்வித் திணைக்களம்
Department of Education - Western Province

වර්ෂ අවසාන ඇගයීම
ஆண்டிறுதி மதிப்பீடு — 2016
Year End Evaluation

ශ්‍රේණිය தரம் Grade	11	විෂය பாடம் Subject	Mathematics	පත්‍ය வினாத்தாள் Paper	I	කාලය நேரம் Time	02 Hours

Name / Index No : ....

....
Signature of invigilator

Important :

❖ This paper consist of 8 pages.

❖ Write your **index number** correctly in the appropriate place on **page one** and **page three.**

❖ Answer all questions **on this paper itself.**

❖ Use the space provided under each question for working and writing the answer.

❖ It is necessary to write relevant steps and correct units.

❖ Marks will be awarded as follows:

02 marks each for questions 1 - 25 in part A

10 marks each for questions in part B

For marking examinor's use only

Question number		Marks
A	1 - 25	
B	1	
	2	
	3	
	4	
	5	
Total		

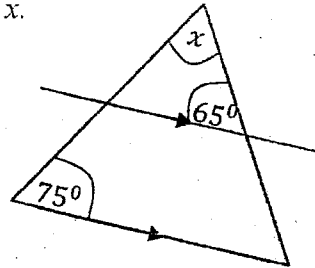..
Marked by

Part A

• Answer all the questions on this paper itself.
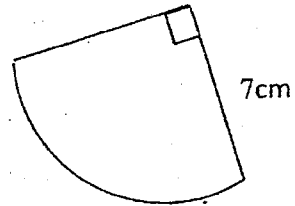
(1) Select and underline the nearest value of $\sqrt{87}$ from the following numbers.

    (i) 9   (ii) 8.7   (iii) 9.6   (iv) 9.3

(2) Find the least common multiple of the terms $2xy^2$ and x^2y.

(3) According to the information given in the figure, find the value of x.
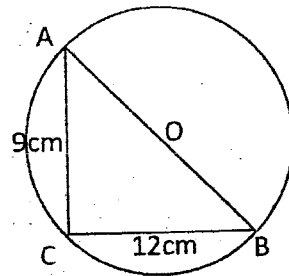
(4) Find the area of the sector given in the figure.

7cm

(5) A, B and C are three points on the circle with the centre O.
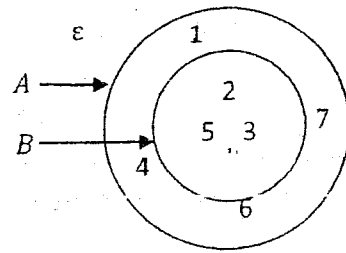
    AC = 9cm and BC = 12 cm. Find the AB length.

A

9cm

O

C   12cm   B

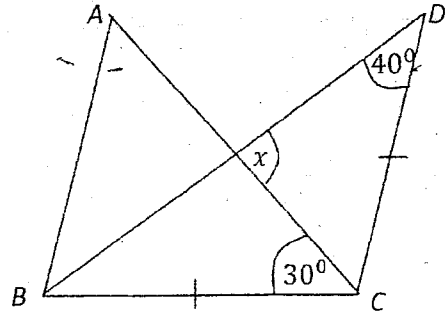(6) Write the set of positive integral solutions of $2x \le 6$.

(7) $lg\ 3 = 0.4771$. Fill in the blanks of the following expression which is written in index form.

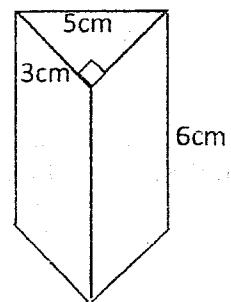$$\boxed{} = \boxed{}^{0.4771}$$

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(8) Write the set A ∩ B using the method of listing elements.

(9) According to the information given in the figure, find the value of x.

(10) Except the triangular faces, draw sketches of any two faces of the right prism given in the figure with the measurements.
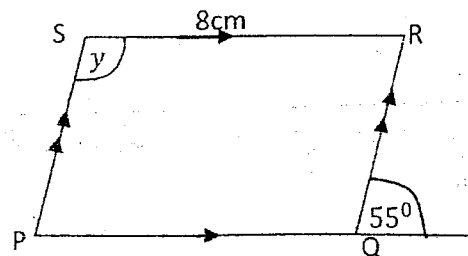

(11) Simplify. $\dfrac{1}{x} - \dfrac{1}{4x}$

(12) When a certain type of perfume is imported, custom duty of 36% of its value has to be paid. If Rs.72 000 has to be paid as the custom duty, what is the value of the stock of perfumes?
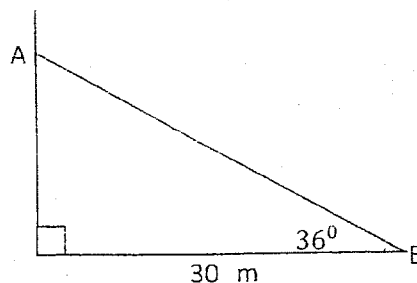
(13) PQRS is a parallelogram. According to the given information,
  i. Find the length of the side PQ.

 ii. Find the value of y.

3 66

(14) Solve. $4 - \dfrac{1}{2x} = 2$

(15) The locations of an observer A, who is in a vertical building and a car B parked on the road is shown in the figure. Write the location of the car with respect to the observer in terms of the length and the angle.

A

36^0

30 m

B

(16) In the triangle ABC, the midpoints of the sides AB, BC and CA are X, Y and Z respectively. If the perimeter of the triangle XYZ is 15cm, find the perimeter of the triangle ABC.

A

X   Z

B   C

Y
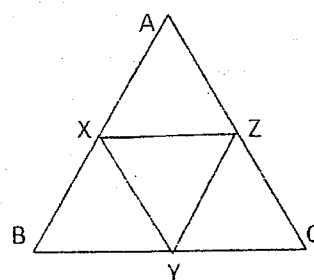
(17) If n (AUB) = 60, n(A) = 25, n(B) = 35, from the following statements, select and underline the ones which are true.
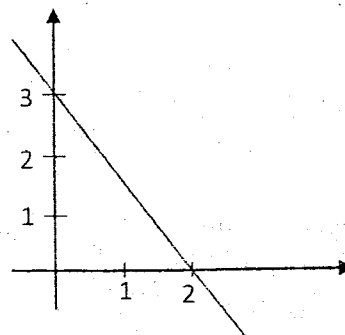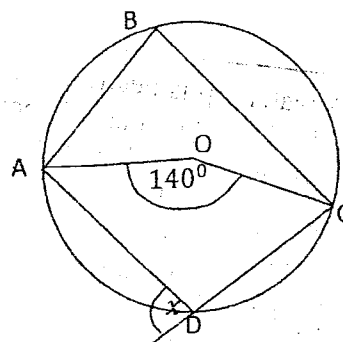
   i.   A∩B is a null set.

   ii.   A ⊂ B

   iii. n (A∩ B) = 0

   iv. n (A ∩ B) = n(A) + n(B)
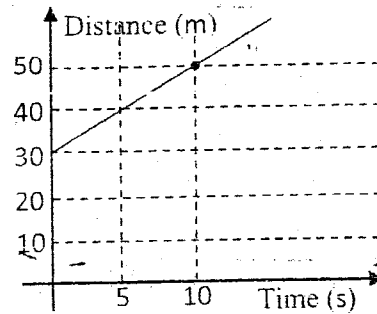
(18) Find the gradient of the graph.

3

2

1

1   2

(19) In the circle with the centre O, ABCD is a cyclic quadrilateral. According to the information given in the figure, find the value of x.

B

A

O

140^0

C

x

D
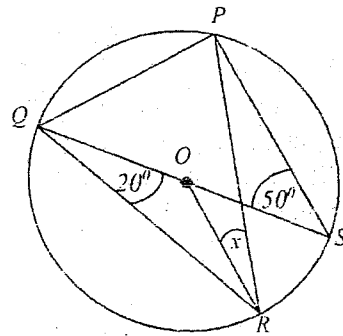
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(20) Figure shows a distance time graph of a moving object. According to the information write the speed of the object with relevant units.

(21) Write the nth term (T_n) of the geometric progression 3, 9, 27, 81..... in terms of n.

(22) The points P, Q, R and S are situated on the circumference of the circle with centre O. According to given information find the value of x.

(23) Factorize. $x^2 - 3x - 4$

(24) The figure shows an incomplete histogram which is drawn using the assessment marks of a group of students. If the total number of students in the group was 38, complete the histogram by drawing the bar relevant to the class interval 40 – 60.
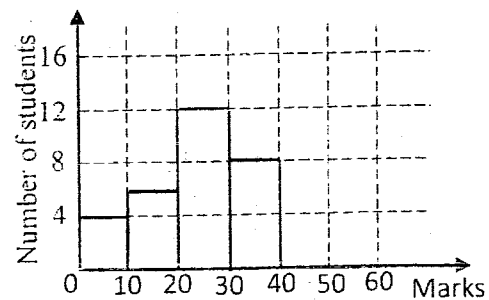
(25) A water tap is needed to be fixed inside the ABCD rectangular shaped vegetable bed, equidistance to A and B and equidistance to the sides AD and AB. An incomplete sketch drawn for that is given in the figure. Complete the sketch and mark the location of the tap T.

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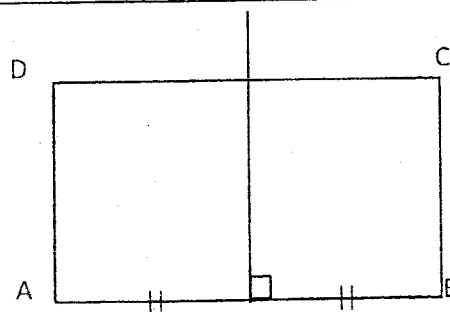
Part B

- ## Answer all the Questions on this paper it self

(01) Three men who started to build a parapet wall, finished $\frac{2}{5}$ of it during the first week. During the second week they were able to finish only $\frac{2}{3}$ of the remaining length.

   i. What fraction of the whole length of the wall were finished in the second week?

   ii. Express the remaining length of the wall that has to be built at the end of the second week, as a fraction of the total length of the wall.

   iii. Express the magnitude of the task done in man days at the end of the second week, if they worked 6 days per week.

   iv. How many more days will they need to complete the parapet wall?

(02) A lamina constructed by a student, using a square with the length of a side 14cm is given Below.

Constructed lamina
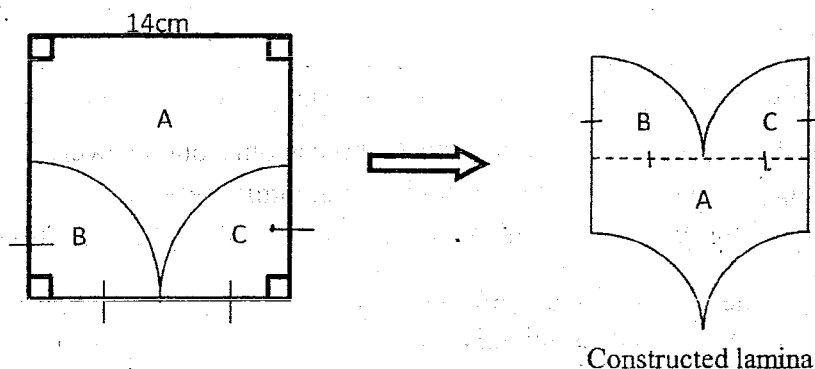
   i. Find the perimeter of the constructed lamina.

   ii. Find the area of it.

   iii. A wooden board with the length 98cm and the breadth 70cm is needed to be covered using the constructed lamina, without gaps or overlaps. State whether the maximum number of laminas can be laid when it is arranged length-wise or breadth-wise. Find the maximum number of laminas that can be laid on the board.

   iv. Draw a sketch of another figure that can be constructed using the pieces A, B and C and mark the positions of the pieces A, B and C on the figure.

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(03) The assessed annual value of Mr. Thilak's house which lies within the limits of a certain urban council is Rs. 30 000. He pays Rs. 450 as rates per quarter.

   i.   Find the annual rate that have to be paid for Mr. Thilak's house.

   ii. Find the percentage that the urban council charges as rates.

   iii. Mr. Thilak has rented his house for a monthly rent of Rs. 3 000 and he spend Rs . 2 200 annually on maintenance of the house. Find the ratio between the annual net profit he gains by giving the house on rent and the annual expenses .

   iv. Mr. Thilak barrowed some money at an annual simple interest rate of 8% to renovate the roof of the house. After one year he settled the loan by paying Rs. 21 600. Find the amount he borrowed.

(04) In a multiple choice question paper, for each question, there are four choices numbered 1, 2, 3 and 4. Among those choices only one answer is correct. When answering the question paper, a student randomly selected the answers for the questions A and B, as he doesn't know the answers of the two questions.

   i.   Represent the sample space of the event choosing the answers randomly for the questions A and B, on the given grid.

   ii. If the correct response for the question A is choice number 3 and the correct response of the question B is choice number 4, write the probability of selecting the correct response for the both questions and mark it on the grid.
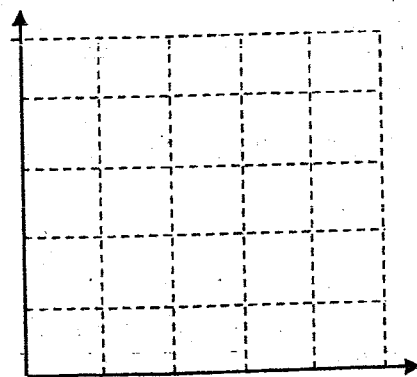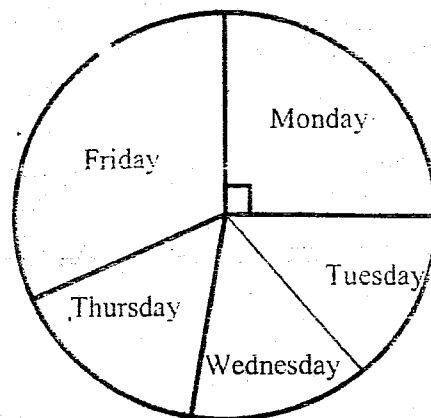
   iii. Mark on the grid, the probability of the event at least one answer being correct.

   iv. Find the probability of answering only one question correctly.

   v.   Express the probability of both answers being wrong as a percentage.

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(05) a) The incomplete pi-chart represents the information on the number of patients who came to a certain dispensary during 5 days of a week.

i. If the total number of patients who came during 5 days of the week was 60, how many patients came on Monday?

ii. If the number of patients who came on Tuesday was 10, find the angle at the centre of the relevant sector.

iii. Number of patients who came on Wednesday and Thursday are same and the number of patients who came on Friday was three time of the number of patients who came on one of the above days. Accordingly find the angle at the centre of the sector relevant to Friday and mark it on the relevant sector.

b) The information on the number of coconuts pluck from some coconut trees in anestate are given below.

8, 6, 7, 9, 10, 5, 7, 6, 9, 8, 5, 4, 11, 10, 4

For this group of data, find the

i. First and the third quartiles.

ii. Interquartile range

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