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ஊவா மாகாண கல்வித் திணைக்களம்
Uva Provincial Department of Education

G.C.E (O/L) Examination - Rehearsal Test – 2021(2022)

Grade 11	Mathematics I	Time : 2Hrs

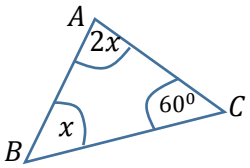
Answer all questions on this paper itself.

Part A

1). 8 men completed $\frac{1}{3}$ of a certain task within 5 days. How many more men are required to complete the remained part in 4 days ?

2). If $10^{2.3892} = 245$ then evaluate. $lg245$.

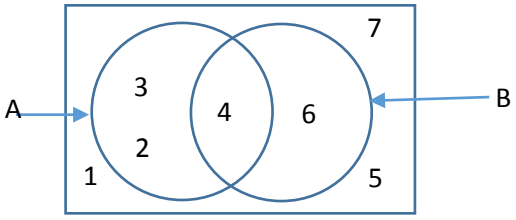
3). Find $A\hat{B}C$



4). Find LCM of $4x^2, 6xy^2, 8xy$

5). 1 200***l*** of water flows through a pipe within 15 minutes. Find that rate of flowing in litres per minute.

6). Write A ∩ B' as a list.

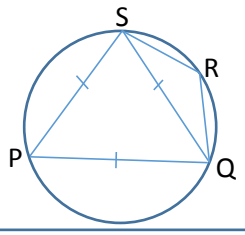


7). Factors of $2x^2 + 5x - 12$ are $(2x - a)(x + b)$. Accordingly find ,

i) *value of* a

ii) *value of* b

8). PQS is an equilateral triangle. Find $Q\hat{R}S$.



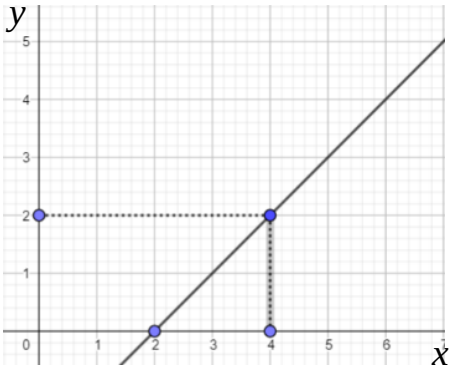
9). The diagram shows sketches of three rectangular faces of a triangular prism

Draw a rough sketch of the triangular face with correct measurements.

10). In the straight line find

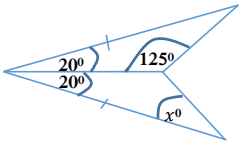
i). gradient

ii). Intercept.



11). Write the two smallest integers satisfying the inequality $5 - 3x < 8$..

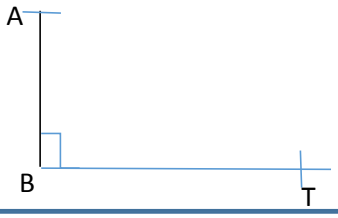
12). Find x.



13). $5x - 2y = 2$

$3x + 2y = 2$ Write the suitable value for x in the given simultaneous equation.

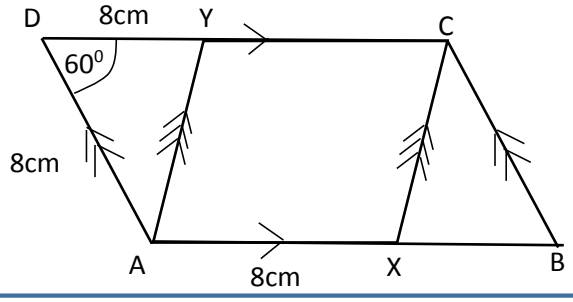
14). AB is a vertical wall of a building and A is represented by an upper point and B is represented by a point on the ground. An observer who is at A, sees a point T which is situated 12m away from B with an angle of depression 28^0. Represent it on the diagram.



15). There are 12 elements in the sample space of a certain random experiment and the ability of happening the event A is P(A) = $\frac{3}{4}$. Find the number of elements of the event A.

16). $a, 48, 144$ are three adjacent terms of a geometric progression. Find "a".

17). *According to the data find the length of AB*..



18). *If* $A = \begin{bmatrix} 5 & 1 \\ 2 & 0 \end{bmatrix}$ *and* $B = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$. In the matrix $A \times B$ write

i). the order of matrix,

ii). the number of elements.

19). The first quartile and the interquartile range of a distribution containing 15 scores written in ascending order are 23 and 4 respectively. Put a tick(√) or cross(x) in front of each of the following statement according to its validity.

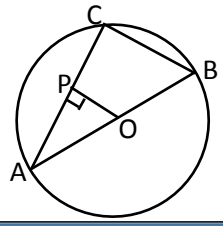
i). The third quartile is 19. ( )

ii). The 12^{th} score from the left end of the distribution represents the 3^{rd} quartile . ( )

iii). There are only 4 scores between the first and the third quartile. ( )

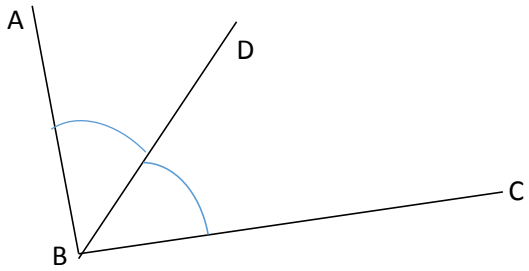
20). Kamal borrowed a certain amount under the simple interest method at the rate of 12% annual interest rate for two years and paid Rs, 8 400 as interest for two years. Hence find the amount that he borrowed.

21). A,B and C lie on the circle of centre O**.** OP ⊥ AC**.** Write two relations between OP and BC

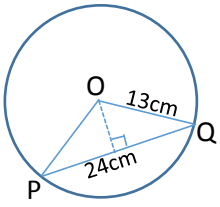


22). The area of the curved part of a cylinder of base radius 7cm is 220cm^2. Find the height of the cylinder(The area of the curved part of a cylinder is $2\pi rh$)

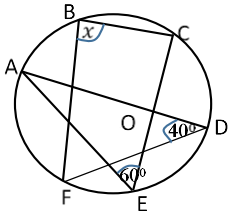
23). The locus of a point equidistant from AB and BC is BD**.** Mark the location of the point "M" equidistant from AB and BC and also equidistant from B and C on the following rough diagram using the knowledge of loci.



24). PQ is a chord of the circle of centre O. Find the perpendicular distance from O to PQ.



25). $A\hat{D}F = 40^0, A\hat{E}C = 60^0, A, B, C, D, E, F$ lie on the circle of centre O. Find $F\hat{B}C$



Part B

Answer all questions on this paper itself.

1) Out of the students who entered to advance level classes of a certain school $\frac{2}{5}$ is to Bio classes, $\frac{1}{3}$ to Maths classes. Out of the remainder $\frac{1}{4}$ entered to commerce classes and the remainder to the Art classes.

   i) What is the fractional part of the students who entered to the Bio and Maths classes out of the total number of students.?.

   ii) Write the number of students who entered to the commerce classes as a fraction out of the total number of students

   iii) If there are 30 students entered to the art classes then find the total number of students entered to the Advance level classes..

   iv) Show that the number of students in bio classes is twice the number of students in art classes.

2) .

a) The annual assessed value of a house situated in a certain local government area is Rs. 60 000.The owner of the house pays 8% annual rate for this house.

   i) Find the quarterly rate amount of the house.

   ii) If this house has been rented such that to obtain the monthly rental which is equal to ten times of the quarterly rate, then find the annual rental value of the house

b) A washing machine of worth Rs. 40 000 can be bought by paying Rs. 6 000 first and the balance within 9 equal monthly installments each of Rs. 4 800.

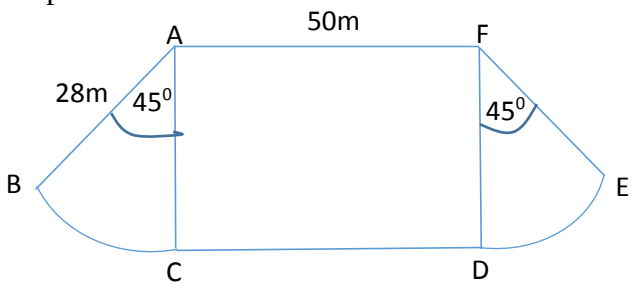
   i) What is the remaining amount that should be paid as installments?.

   ii) Find the total amount that should be paid as installments.

iii) What is the total interest that should be paid?

3) The following diagram shows a rough sketch of a garden plan. The rectangular part contains roses plants and the sectors contain Anthurium plants.

i) Find the length of BC arc.

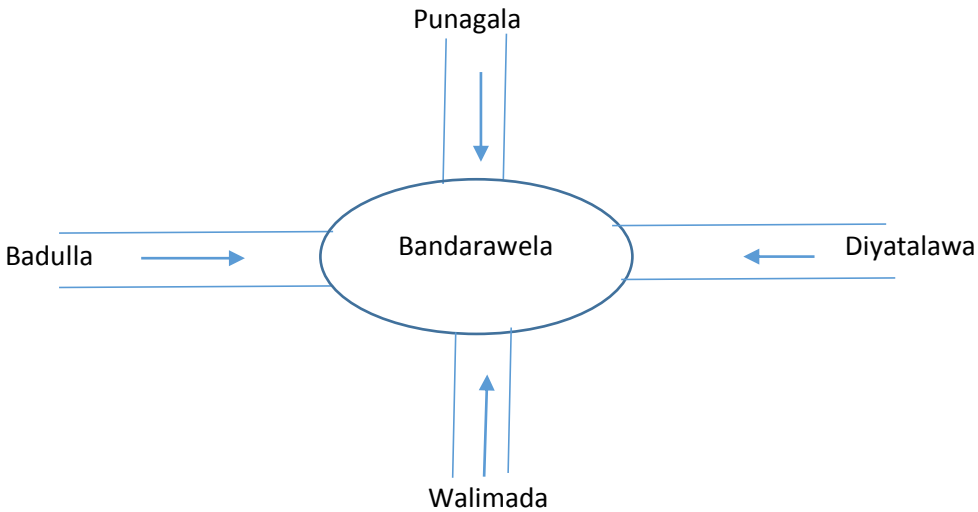


ii) Find perimeter of the garden.

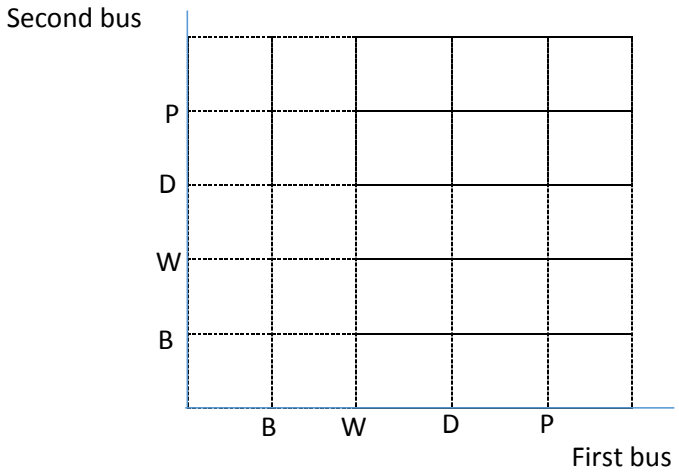
iii) Find the area of the part containing Anthurium plants.

iv) The two regions with anthurrium are planned to be changed to have a new rectangular shape such that the margins AC and DF as sides. If it is so find the length of the new rectangular shaped garden .

4) The following diagram shows four main routes by which a bus can reach Bandarawela town..

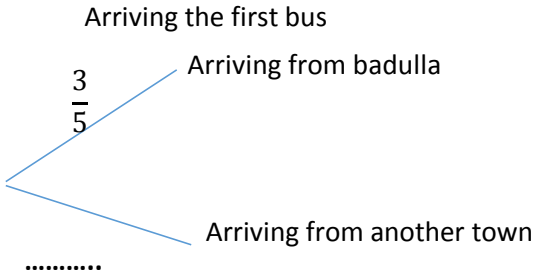


i) Represent the sample space showing how two consecutive buses can reach Bandarawela by a randomly selected route on the grid given below.



ii) Encircle the event that the two buses can't arrive on the same route and write its probability

iii) It is noticed that 3 busses out of five buses arriving to Bandarawela town within a minute are from Badulla. Below is an incomplete tree diagram drawn to illustrate whether the first bus arriving in a minute is from Badulla or another route. Complete it by showing the relevant probabilities on its branches.



iv) Extend the above tree diagram to indicate the route taken by the second bus arriving within that minute and also write the relevant probabilities

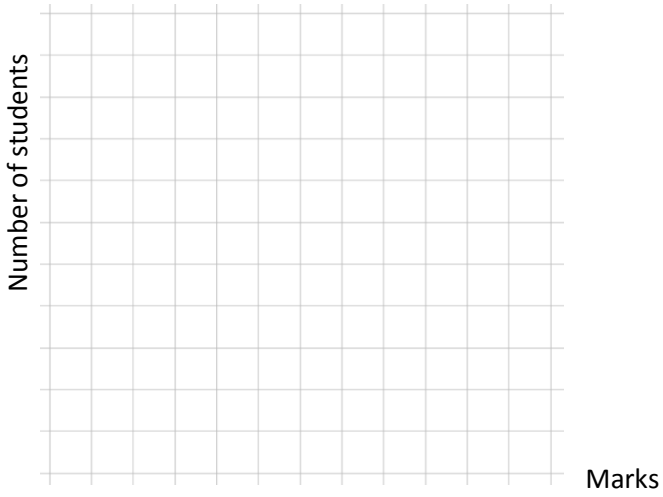
v) Obtain the probability that only one of the above two buses from the subordinate route will arrive from Badulla by using the tree diagram..

5)

a) The following is a frequency distribution the group of students in grade 11 in a school, including the marks obtained on a mathematics paper(Where 20-30 is more than 20 and less than or equal to 30, and the same is true of other class intervals).

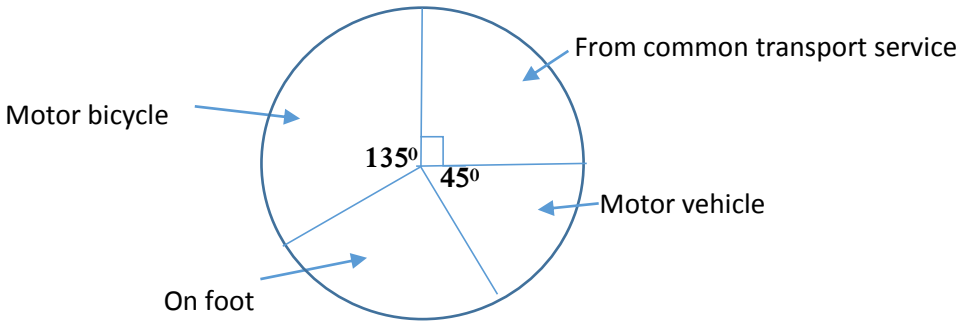
Marks(class intervals)	20-30	30-40	40-50	50-60	60-90
Number of students	4	6	12	10	18

i) Draw a histogram to represent the above data in the following grid..



ii) Draw the frequency polygon on the histogram.

b) The following is pie-chart showing data how the employees of an organization coming to work.



i) Find the value of the centre angle representing the employees who are coming on foot

ii) If 15 coming by motor vehicles then find the total number of employees in the organization.

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ஊவா மாகாண கல்வித் திணைக்களம்
Uva Provincial Department of Education

G.C.E (O/L) Examination Rehearsal Test - 2021(2022)

Grade 11 | Mathematics II | Time : 3 Hrs

- Answer only 10 questions selecting any 5 questions from part A and any 5 questions from part B.
- 10 marks will be awarded for each question.
- The volume of a sphere of radius r is $\frac{4}{3}\pi r^3$. The volume of a cylinder of base radius rand h is $\pi r^2 h$.

Part A

Answer only 5 questions.

1) The length of a piece of aluminium strip, cut and sold during a day from an aluminium workshop shows the frequency distribution below to the nearest centimeter.

length (cm)	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Number of pieces	3	9	16	23	18	8	3

i) Write the model class.

ii) A meter of aluminium strip costs Rs.200**.** Find the mean length of an aluminium strip sold and according to it find the total amount of money received by selling aluminium strips within 30 days.

2) The following is a table of values set to draw the graph of the function $y = k - (x - a)^2$**.**

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

i) Select the appropriate scale and draw the graph of the above function on the standard axis system**.**

ii) Draw the axis of symmetry.

iii) Write the value of k and a respectively.

iv) Write the range of values of x for which the function decreases in the range$-4 \leq y \leq 4$**.**

v) Write the value of $\sqrt{k}$ to the first decimal place.

3) **.**

a) Simplify**.** $\frac{1}{3x+3} - \frac{1}{5x+5}$

b) 5 shirts and 3 denim trousers can be bought for Rs.14 500 and 3 shirts can be bought for the amount equal to the amount that can be bought two denim trousers.

i) Taking the price of a shirt as Rs.x and the denim trouser as Rs. Y and build a pair of simultaneous containing x and y.

ii) Solving them find the price of a shirt and the price of a denim trouser respectively.

4) .

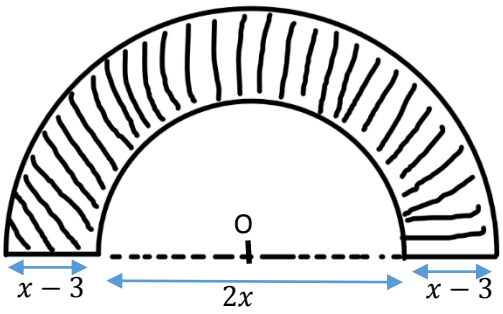


Figure A

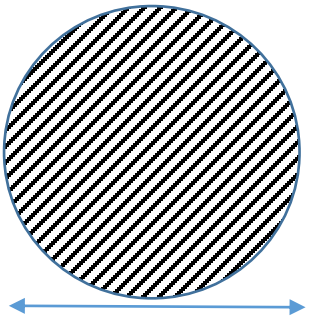
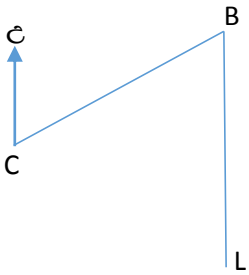


Figure B

The area of the darkened part of figure A with two concentric semicircles is equal to the area of figure B. Show that $x^2 - 4x - 147 = 0$ is satisfied by the relation between the shaded regions of the diagrams and find x by solving it.$(\sqrt{151} = 12.29)$

5) .



In the diagram C represents a clock tower. A bus hault(B) is situated at the bearing of 064^0 and 100m away from it. A post office(P) is situated to the east of C. The library (L) is situated to the south of Post office and 63m apart from it.

i) Copy this diagram on to your answer script and mark the given data on it..
ii) Calculate the shortest distance between C and P to the nearest meter using the trigonometric tables.
iii) Calculate $P\hat{C}L$ correct to the nearest degree. Accordingly find the bearing of the library (L) as seen from the clock tower.

6) From the bonus amount received by Mr. Sampath who retired from his job deposited a part of it in a fixed deposit in a certain financial authority and the balance invested in the purchase of shares of Sithumini company at the market price of Rs. 120 each. After receiving the annual income he earns Rs. 650 000 from the sale of the above shares at a capital gain of Rs. 10 per a share.

i) Find the number of shares that he had.
ii) The amount invested in the company was 30% of the total amount of the bonus money that he received. Accordingly find the amount of bonus that Mr. Sampath received..
iii) The deposited in the fixed account receives an interest of 15% per annum. Calculate the interest received from the financial authority at the end of 2 years.

Part **B**

Answer only 5 questions.

7) A florist near a public temple sells 50 flower vasses per a day of the first month. Afterwards he sells 15 flower vases more than the number of vases sold in a day of the previous month.

i) Find the number of flower vases that he sells in a day of the first , second and third month**.**

ii) Find in which month that 125 flower vases are sold per a day**.**

iii) The net profit that he obtains by selling one flower vase is Rs. 20. Assuming that he sells flower vases in 30 days in a month, then find the number of flower vases that he sells at the end of the year and also show that his annual income does not exceed Rs. 955 000**.**

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8) Do the following constructions by using only a straight edge, cm/mm scale and a pair of compass and also representing all constructions lines clearly.

i) Construct the circle of radius 3.5cm and mark the centre as O**..**

ii) Mark any point on the circle as P and also mark another point Q such that $P\hat{O}Q = 120^0$

iii) Construct a tangent to the circle at Q**..** Produce PO such that it meets the tangents that you constructed at R**..**

iv) Construct another tangent to the circle at R as RS**..**

v) Find the value of $Q\hat{R}S$ giving reasons**..**

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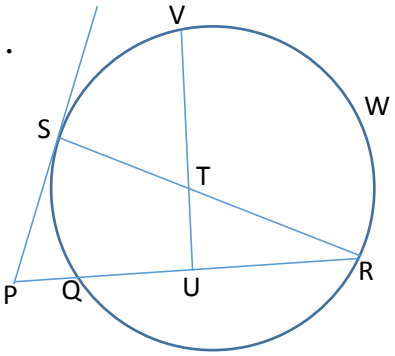
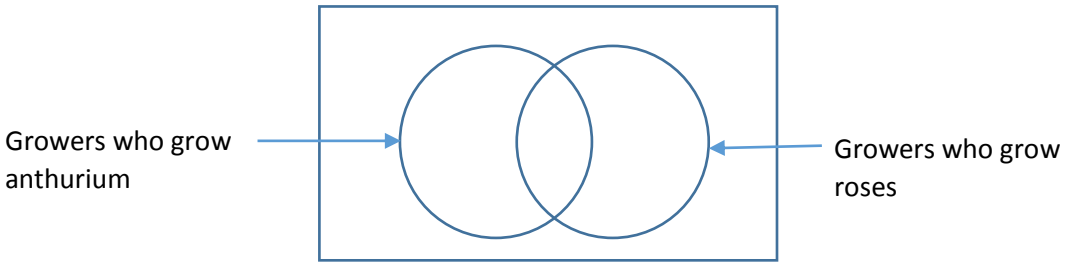
9) **.**



The tangent drawn to the circle of diameter SR at S is PS. PR crosses the circle at Q and U lies on QR. T is situated on SR such that $Q\hat{T}U = U\hat{T}R$. The produced UT meets V on the circle. Show that PUTS is a cyclic quadrilateral. Joining necessary line segments show that $S\hat{Q}V + U\hat{V}R = S\hat{P}Q$

10) Of the 60 ornamental flower growers, 13 grow only anthuriums and 7 grow only roses, while 28 do not grow anthurium or roses



i) Copy this venn diagram on to your answer script and include the above data on it. How many growers who grow both anthuriums and roses ?

ii) Out of the rose growers, 15 do not grow orchids and the growers who grow anthuriums do not grow archides. How many grow orchids and roses ?

14 grow orchids.

iii) Copy down the above venn diagram again and represent the subset "Growers who grow orchids" in it in suitable manner and also insert the relevant values in relevant regions.

iv) Find the number of growers who do not grow any type of the flowers .

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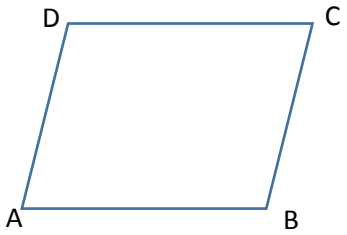
11) .



In the quadrilateral ABCD, $B\hat{A}D = B\hat{C}D$, $A\hat{D}B = C\hat{B}D$. E is situated on the produced CD such that AD = AE .

i) Copy down the above diagram on to your answer script and insert the information on it.

ii) Show that ABCD is a parallelogram.

iii) Show that the area of BAE Δ is equal to the area of ACDΔ

iv) If EB $\perp$ BC then show that $AE^2+BE^2=CE^2$.

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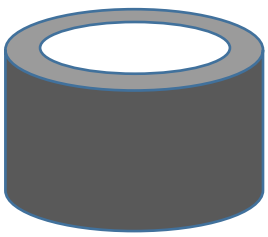
12) The innermost radius of a right cylindrical metallic pipe is x and the outer most radius is three times of the innermost radius .The height of it is 2 units. This metallic pipe is melted and made 24 small spheres of radius "r" without any wastage. Show that $x = 2\sqrt{r^3}$ and if r = 0.53 find the value of x corrected to two places of decimals.



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A කොටස

ප්‍රශ්න අංකය			උත්තර	ලකුණු			වෙනත්
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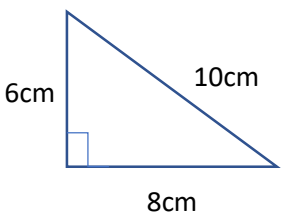
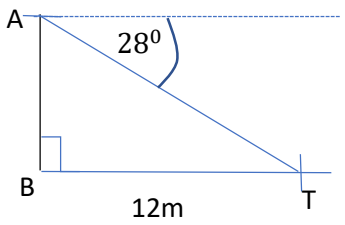
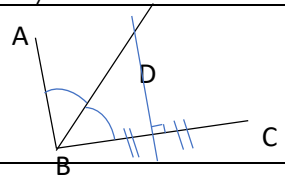
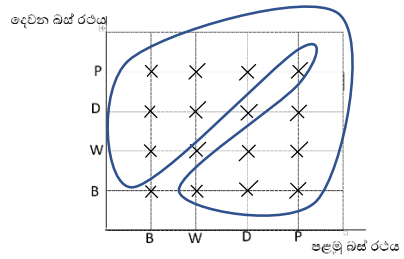
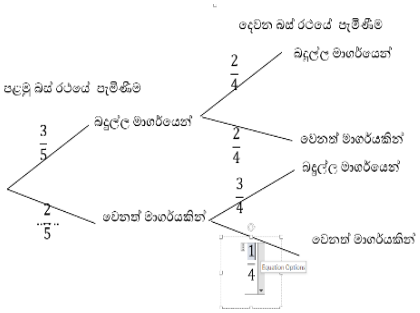
02			2.3892	02	02		
3			$40 / 40^0$ $x + 2x + 60 = 180$	02 01	02		රූපයේ දී ලකුණු කර ඇති විට ලකුණු දෙන්න
4			$24x^2y^2$ පද 3 ම නිවැරදිව සාධකවලට වෙන් කර ඇති විට	02 01	02		
5			80 $\frac{1200}{15}$	02 01	02		
6			{2,3}	02	02		
7			$a = 3 \quad b = 4$	01+01	02		
8			120^0 $S\hat{P}Q = 60^0$	02 01	02		රූපයේ දී ලකුණු කර ඇති විට ලකුණු දෙන්න
9				02	02		
10		i ii	1 -2	01 01	02		
11			0 , 1 $x > -1$	02 01	02		

12			35^0 180-(20+125)	02 01	02		රූපයේ දී ලකුණු කර ඇති විට ලකුණු දෙන්න
13			$\frac{1}{2}$ $8x = 4$	02 01	02		
14				02	02		28 -------01 12--------01
15			9	02	02		
16			16 r=3	02 01	02		
17			16cm / 16 YC= 8cm	02 01	02		
18		i ii	2×1 2	01 01	02		
19			රු. 35 000 $p \times \frac{12}{100} \times 2 = 8400$	02 01	02		
20			i × ii √ ii ×	02	02		නිවැරදි 2 පමණක් නම් 01
21			$OP = \frac{1}{2}BC$ හෝ $BC = 2OP$ *OP//BC*	01 01	02		
22			*5cm* $2 \times \frac{22}{7} \times 7 \times h = 220$	02 01	02		
23				02	02		

24			5cm	02	02		
25			*80* $2 \times 60 + 2 \times 80 + 2 \times x = 360$	02 01	02		

B කොටස								
01		i	$\frac{2}{5} + \frac{1}{3}$ $\frac{11}{15}$	01 01	02			වෙනත් ක්‍රම සඳහා ලකුණු ලබා දෙන්න
		ii	$(1 - \frac{11}{15}) \times \frac{1}{4}$ $\frac{1}{15}$	01+01 01	03			
		iii	$\frac{4}{15} \times \frac{3}{4}$ $\frac{1}{5}$ ---------30 $5 \times 30 = 150$	01 01 01	03			
		iv	ජීව විද්‍යාව : කලා $\frac{2}{5}$: $\frac{1}{5}$ 1 : 2	01 01	02			
							10	
02	*a*	i	$\frac{8}{100} \times 60\,000$ රු.4800	01 01	02			එක තැනක හෝ නිවැරදි ඒකක නැති විට මුළු ලකුණු වලින් 1 ක් අඩු කරන්න
		ii	$\frac{4800}{4}$ රු.1200	01 01	02			
	b	i	40 000-6 000 රු.34 000	01 01	02			

		iv	4800×9 රු. 43 200	01 01	02			
		v	43200-34000 රු.9200	01 01	02		10	
03		i	$\frac{1}{8} \times 2 \times \frac{22}{7} \times 28$ $22m$	01 01	02			එක තැනක හෝ නිවැරදි ඒකක නැති විට මුළු ලකුණු වලින් 1 ක් අඩු කරන්න
		ii	$(28 + 50 + 22) \times 2$ 200m	01 01	02			
		iii	$(\frac{1}{8} \times \frac{22}{7} \times 28 \times 28) \times 2$ $616m^2$	01+01 01	03			
		iv	$\frac{616}{28} + 50$ 72m	01+01 01	03		10	
04		i		02	02			
		ii	වට කොට දැක්වීම $\frac{12}{16}$ හෝ $\frac{3}{4}$	01 01	02			
		iii iv		01+01+01	03			
		v	$\frac{3}{5} \times \frac{2}{4} + \frac{2}{5} \times \frac{3}{4}$ $\frac{12}{20}$ හෝ $\frac{3}{5}$	01+01 01	03		10	

5	a	i	නිවැරදි ජාල රේඛයට 60-90 ස්ථම්භය වැරදි නම් 1 ක් අඩු කරන්න	03	03			
		ii	අන්ත ලක්ෂ්‍ය 60-90 මධ්‍ය ලක්ෂ්‍ය නිවැරදිව මධ්‍ය ලක්ෂ්‍ය යා කිරීම	01+01 01 01	04	07		
	b	i	360-(90+45+135) = 90	01	01			
		ii	$\frac{45}{365} \times 15 = 120$	02	02	03	10	

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අ.පොස .සා/පෙළ පෙරහුරු පරීක්ෂණය 2021(2022)

32 S II - ගණිතය II පත්‍රය

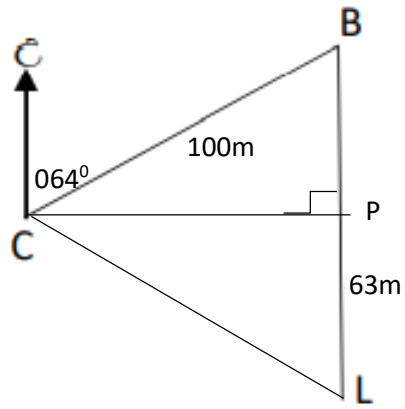
A කොටස

<table>
<tr><th colspan="3">ප්‍රශ්න අංකය</th><th>පිළිතුරු</th><th colspan="3">ලකුණු</th><th>වෙනත්</th></tr>
<tr><td>01</td><td></td><td>i</td><td>30-40</td><td>01</td><td>01</td><td></td><td></td></tr>
<tr><td></td><td></td><td>ii</td><td>
<table>
<tr><th>පන්ති ප්‍රාන්තර</th><th>f</th><th>මධ්‍ය අගය</th><th>d</th><th>fd</th></tr>
<tr><td>0-10</td><td>3</td><td>5</td><td>-30</td><td>-90</td></tr>
<tr><td>10-20</td><td>9</td><td>15</td><td>-20</td><td>-180</td></tr>
<tr><td>20-30</td><td>16</td><td>25</td><td>-10</td><td>-160</td></tr>
<tr><td>30-40</td><td>23</td><td>35</td><td>0</td><td>0</td></tr>
<tr><td>40-50</td><td>18</td><td>45</td><td>10</td><td>180</td></tr>
<tr><td>50-60</td><td>8</td><td>55</td><td>20</td><td>160</td></tr>
<tr><td>60-70</td><td>3</td><td>65</td><td>30</td><td>90</td></tr>
<tr><td></td><td>80</td><td></td><td></td><td>0</td></tr>
</table>
මධ්‍යන්‍යය = 35cm
ඇලුමිනියම් පටිවල වටිනාකම = $\frac{35\times80\times30}{100}\times 200$</td><td>මධ්‍ය අගය-01
d-01
fd- 02
$\sum fd$ − 01
01
01+01+ 01</td><td>05
04</td><td></td><td>10</td><td></td></tr>
<tr><td>02</td><td></td><td>i</td><td>ප්‍රස්තාරය ඇඳීම
නිවැරදි අක්ෂ පද්ධතිය
ලක්ෂ්‍ය 5 කට
සුමට වක්‍රය</td><td>
01
01
01</td><td>
03</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>ii</td><td>සමමිතික අක්ෂය</td><td>01</td><td>01</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>iii</td><td>$k=5\ \ a=2$</td><td>01+01</td><td>02</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>iv</td><td>$-1<x\leq 1$</td><td>02</td><td>02</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>v</td><td>$\sqrt{5}=x-2$
$\sqrt{5}=4.2\pm0.1-2$
$\sqrt{5}=2.2\pm0.1$</td><td>
01
01</td><td>
02</td><td></td><td>10</td><td></td></tr>
<tr><td>03</td><td>a</td><td></td><td>$\frac{1}{3(x+1)}-\frac{1}{5(x+1)}$
$\frac{5-3}{15(x+1)}$
$\frac{2}{15(x+1)}$</td><td>01
01
01</td><td>

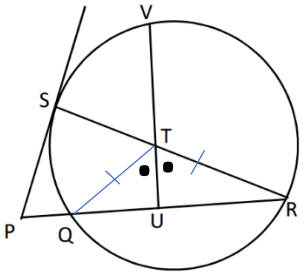
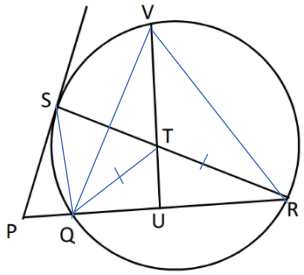
03</td><td></td><td></td><td></td></tr>
<tr><td></td><td>b</td><td></td><td>$5x+3y=14\ 250$
$2y=3x$
$10x+6y=28\ 500$
$6y=9x$
$19x=28\ 500$</td><td>01+01

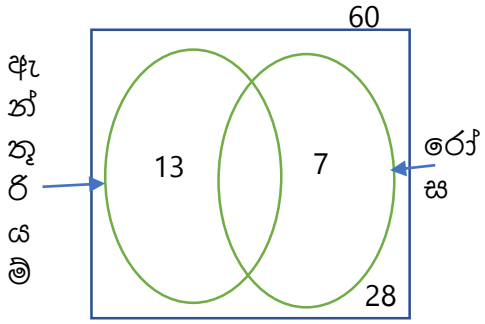
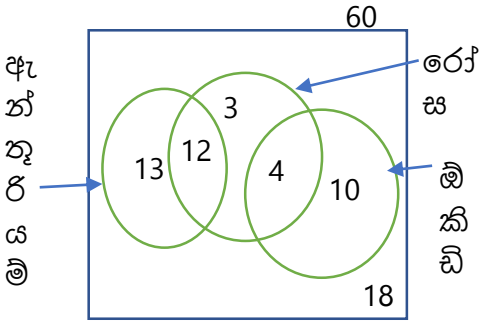
01

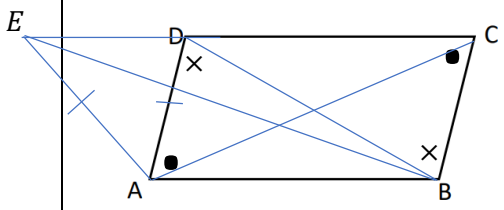
01</td><td>02</td><td></td><td></td><td></td></tr>
</table>

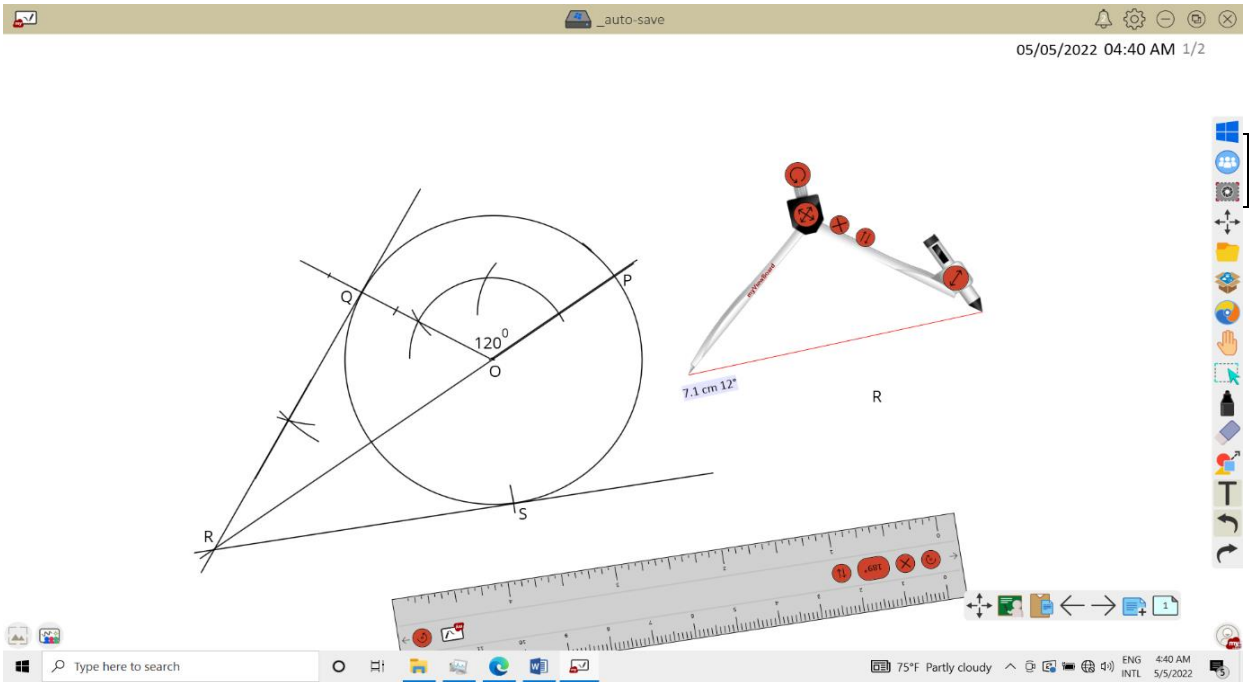
			$x = 1\,500$ $2y = 3 \times 1\,500$ $y = 2\,250$	01 01 01	05		10	
04			$\frac{1}{2}\pi(2x-3)^2 - \frac{1}{2}\pi x^2 = \pi x^2$ $(2x-3)^2 - x^2 = 2 \times 15^2$ $4x^2 - 12x + 9 - x^2 = 450$ $3x^2 - 12x - 441 = 0$ $x^2 - 4x + 147 = 0$ $x^2 - 4x = 147$ $x^2 - 4x + 4 = 147 + 4$ $(x-2)^2 = 151$ $x - 2 = \pm\sqrt{151}$ $x - 2 = \pm 12.29$ $x - 2 = 12.29$ හෝ $x - 2 = -12.29$ $x = 14.29$ හෝ $x = -10.29$ $x > 0$ $x = 14.29$	01+01+01 01 01 01 01 02 01 01			10	
05		i		01 01 01	03			
		ii	$sin64^0 = \frac{cp}{100}$ $0.8988 = \frac{cp}{100}$ $cp = 89.88$ $cp = 90m$	01 01 01	03			

		iii	$\tan P\hat{C}L = \frac{63}{90}$ $\tan P\hat{C}L = 0.7$ $P\hat{C}L = 35^0$ දිගංශය $= 90 + 35 = 125^0$	01 01 01 01	04		10	
06		i	$\frac{650\,000}{130}$ 5000	01 01	02			
		ii	ආයෝජනය කළ මුදල $= 120 \times 5000$ රු. 600 000 පාරිතෝෂික මුදල $=600\,000 \times \frac{100}{30}$ රු.2 000 000	01 01+01	03			
		iii	තැන්පත් මුදල = 2 000 000-600 000 =1 400 000 වැල් පොලිය $= 1\,400\,000 \times \frac{112}{100} \times \frac{112}{100} - 140000$ රු.356 160	01 01+01+01 01	05		10	
07		i	50,65,80,	01	01			
		ii	$T_n = a + (n-1)d$ $125 = 50 + (n-1)15$ $\frac{75}{15} = n - 1$ $n = 6$ *6* වන මාසයේදී	01 01 01	03			සූත්‍රයට හෝ ආදේශයට
		iii	$S_n = \frac{n}{2}\{2a + (n-1)d\}$ $S_{12} = \frac{12}{2}\{2 \times 50 + (12-1) \times 15\}$ $= 6 \times 265$ $= 1590$ අලෙවි කර ඇති මල් වට්ටි ගණන $= 30 \times 1590$=47 700 ලාභය $= 20 \times 47\,700 =$ රු. 954 000 954 000 < 955 000 ලාභය රු. 955 000 නොඉක්මවයි	01 01 01 01+01 01	03		10	

08		i		01				
		ii	P හා Q ---01 , 120 ---2	03				
		iii		02				
		iv		01				
		v		03			10	
09			 $QT = TR$ (දත්තය) $Q\hat{T}U = U\hat{T}R$ (දත්තය) එමනිසා QU = UR වේ. T වෘත්තයේ කේන්ද්‍රය වේ. එවිට $Q\hat{U}T = 90^0$ (වෘත්තයක ජ්‍යාවේ මධ්‍ය ලක්ෂ්‍යට කේන්ද්‍රයේ සිට ඇඳි රේඛාව ජ්‍යායට ලම්බ වේ.) $P\hat{S}T = 90$ (ස්පර්ශ ලක්ෂ්‍යයේ සිට කේන්ද්‍රයට ඇඳි රේඛාව ත් ස්පර්ශකයත් ලම්භ වේ.) $P\hat{S}T + Q\hat{U}T = 90 + 90 = 180$ නමුත් PŜT හා QÛT ,PUTS චතුරස්‍රයේ සම්මුඛ කෝණ වේ. එමනිසා PUTS වෘත්ත චතුරස්‍රයකි.  $S\hat{P}Q = U\hat{T}R$ (වෘත්ත චතුරස්‍රයක බාහිර කෝණය අභ්‍යන්තර සම්මුඛ කෝණයට සමාන වේ.)	01 01 01 01 01 01				

			$2\hat{QVR} = \hat{QTR}$(කේන්ද්‍රය මත ආපාතිත කෝණය වෘත්තය මත ආපාතිත කෝණය මෙන් දෙගුණයකි) $\hat{QVR} = \frac{1}{2}\hat{QTR} = \hat{UTR}$ තවද VU මගින් $\hat{QVR}$ සමච්ඡේදනය වේ. එමනිසා $U\hat{V}R = \frac{1}{2} \times U\hat{T}R$ TR=TV (අරය) $U\hat{V}R = V\hat{R}S$ $S\hat{Q}V = V\hat{R}S$ (එකම වෘත්ත ඛණ්ඩයේ කෝණ). ඒ අනුව $S\hat{Q}V + U\hat{V}R = \frac{1}{2} \times U\hat{T}R + \frac{1}{2} \times U\hat{T}R$ $S\hat{Q}V + U\hat{V}R = U\hat{T}R$ $S\hat{Q}V + U\hat{V}R = S\hat{P}Q$	01 01 01 01				
10		i		01+01 01+01				
			60-(13+7+28)=12	01	05			
		ii	12+7-15=4	01	01			
		iii		03	03			
		iv	28-10=18	01	01		10	

11		i		02	02			
		ii	$A\hat{D}B = D\hat{B}C$ (දත්තය) නිසා AD//BC $ADB\Delta$ හා $BCD\Delta$ වල $D\hat{A}B = D\hat{C}B$(දත්තය) $A\hat{D}B = D\hat{B}C$(දත්තය) DB=DB(පොදු පාදය) $ADB\Delta \equiv BCD\Delta$(කෝ.කෝ.පා.) එමනිසා AB=DC ඒ අනුව ABCD සමාන්තරාස්‍රයකි	01 01 01 01	04			
		iii	$ABE\Delta = ABD\Delta$ $ABD\Delta = ACD\Delta$ $ABE\Delta = ACD\Delta$	01 01	02			
		iv	BC=AD AE=AD එමනිසා BC=AE $EC^2 = BE^2 + BC^2$ $EC^2 = BE^2 + AE^2$	01 01	02		10	
12			$\pi(3x)^2 - \pi x^2 = 24 \times \frac{4}{3}\pi r^3$ $8x^2 = 8 \times 4 \times r^3$ $x^2 = 4r^3$ $x = 2\sqrt{r^3}$ $x = 2 \times 0.53^{\frac{3}{2}}$ $lgx = lg2 + \frac{3}{2}lg0.53$ $lgx = 0.3010 + \frac{3}{2} \times \bar{1}.7243$ $0.3010 + \frac{\bar{1}.1729}{2}$ $0.3010 + \bar{1}.5864$ $\bar{1}.8874$ $x = 0.7717$ $x = 0.77cm$	01+01+01 01 01 01 01+01 01 01		10		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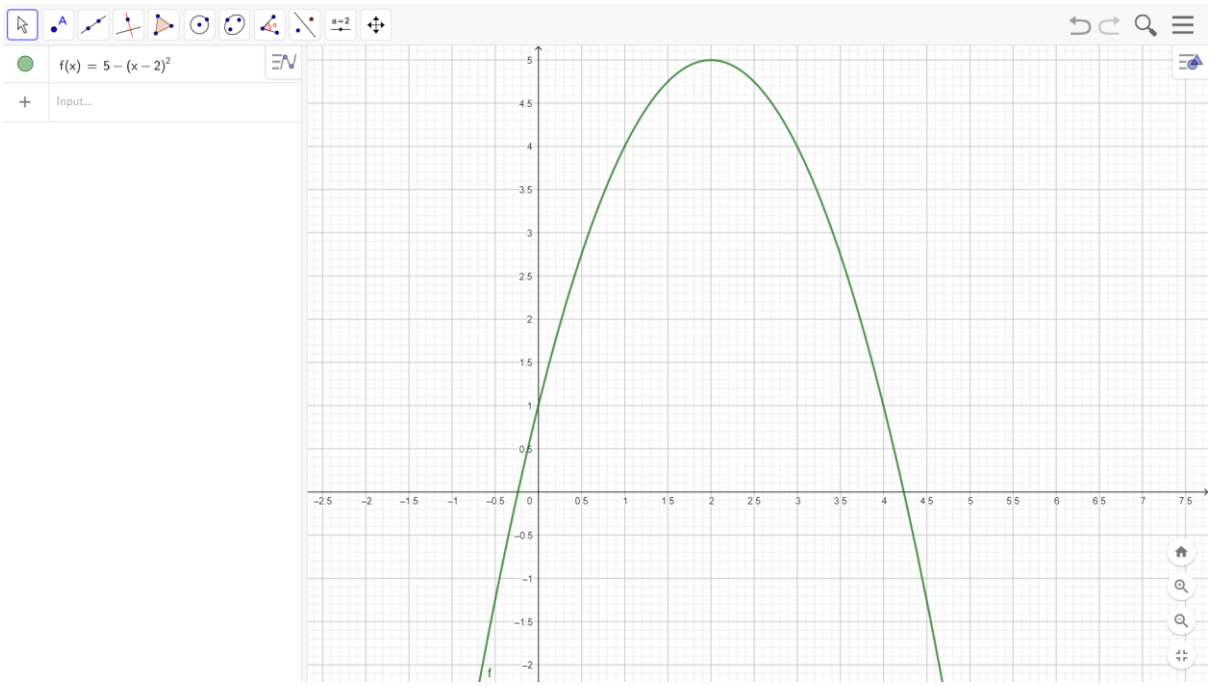
f(x) = 5 − (x − 2)²
Input...

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