2089

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

වර්ෂ අවසාන ඇගයීම 2026
ஆண்டிறுதி மதிப்பீடு
Year End Evaluation

ශ්‍රේණිය தரம் Grade	විෂයය பாடம் Subject	පත්‍රය வினாத்தாள் Paper	කාලය காலம் Time
10	Mathematics	I	02 h

Name/Index Number .....

Certified Correct

.....

Signature of Invigilator

Important:

- This Question paper consists of 8 pages.
- Write your Index Number correctly in the space provided on this page and on page three.
- Answer all questions on this question paper itself.
- Use the space provided under each question for working and writing the answer.
- Indicate the relevant steps and the correct units when answering the questions.
- Marks are awarded as follows:

  In part A

  2 marks for each question

  In part B

  10 marks for each question

For Marking Examiners' Use Only

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

.....

Examiner

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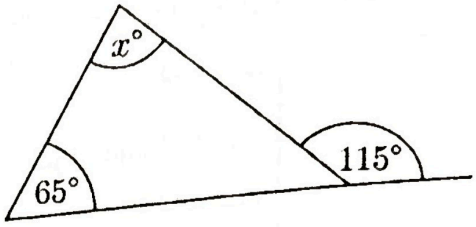
Part A

Answer all the questions on this paper itself.

1) Find the interest received after 3 years for an amount of 18,000 rupees deposited in a bank that pays an annual simple interest of 8%.

2) Find the value of x.

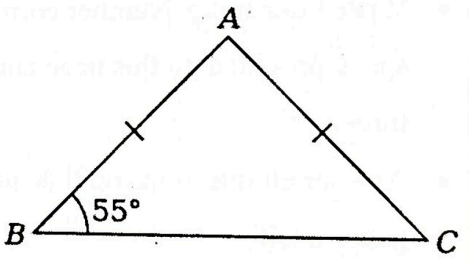


3) Simplify : $\frac{3}{5x} - \frac{3}{10x}$

4) The value of the $\sqrt{72}$ to the first approximation is,

i. 8.3 ii. 8.4 iii. 8.5 iv. 8.6

5) In triangle ABC, $AB = AC$, $A\hat{B}C = 55^0$. Find the value of $B\hat{A}C$.



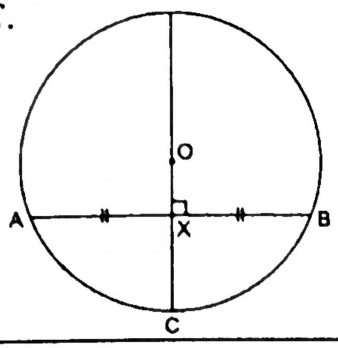
6) Solve : $x^2 - 36 = 0$

7) A train traveling at a speed of 20 ms^{-1} takes 6 seconds to pass a post. Find the length of the train.

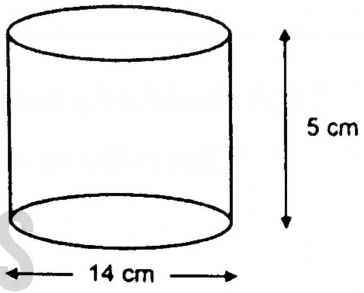
20) Solve the inequality $2x - 1 < 11$ and find the maximum positive integer that can take for x.

21) A and B are any two sets. If $n(A) = 27$, $n(B) = 54$ and $n(A \cup B) = 71$ find $n(A \cap B)$.

22) If $AB = 24\ cm$ and $OX = 5cm$ then find the length of XC.



23) Find the base circumference of another cylinder whose curved surface area is equal to the curved surface area of the cylinder shown in the figure, given that the height of the other cylinder is twice the height of the cylinder in the figure. (The curved surface area of a right circular cylinder of radius r and height h is $2\pi rh$)



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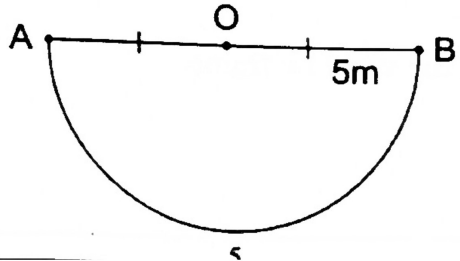
24) $7x + 4y = 19$
$4x + y = 7$

Find the value of $(x + y)$ without solving the given pair of simultaneous equations.

25) Construct the locus of the point which is moving at a distance of 5 m from O and equidistance to A and B. Mark the point where these two loci intersect as K.



Part B

Answer all questions on this paper itself.

1) Out of the road maintenance works, $\frac{3}{8}$ was completed in the past month and $\frac{2}{5}$ of the remaining is expected to be completed in this month.

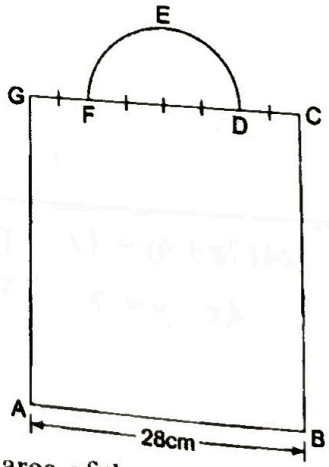
i. What fraction of the total work is expected to be completed in this month?

ii. Based on the expected work to be done in the past month and this month, express the remaining work as a fraction of the total work.

iii. If it is expected that 24 million rupees will be spent to complete the remaining work, calculate the total amount allocated for the road maintenance works.

iv. If 720 man days are required to complete the remaining work, find the number of workers needed if work is carried out for all 30 days of the coming month.

2) A model of a window is shown in the figure.



i. What is the radius of the semi – circular portion?

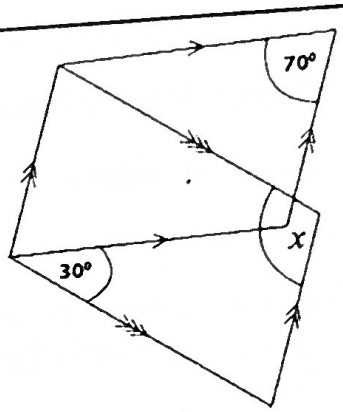
ii. Find the area of the semi – circular portion.
(Take $\pi = \frac{22}{7}$)

iii. If the area of the rectangular portion ABCG is 8 times the area of the sector DEF, find the length BC.

iv. Find the perimeter of the window frame.

8) Consider the probability of an event A, if $P(A) = \frac{3}{8}$, $n(A) = 15$ then find $n(S)$.

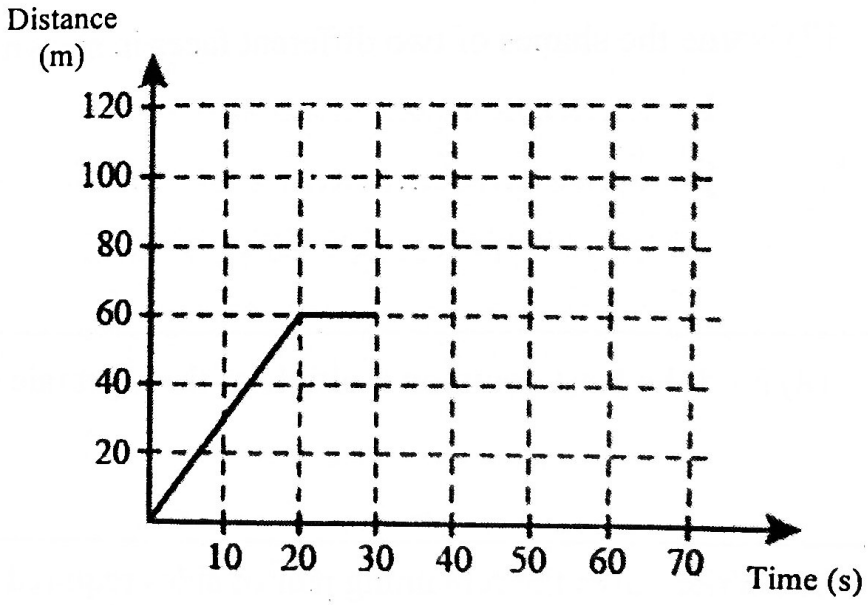
9) Using the given information, find the value of x.



10) Express $\log_3 81 = 4$ in index form.

11) Factorize : $6x^2 + x - 2$

12) Sanuka walks 60 m forward in 20 seconds. He stops for 10 seconds and then returns to his initial position in 30 seconds. Represent his motion on this graph.



13) Fill in the blanks using the suitable words.

The ..... drawn from the ..... of a circle to a chord bisect that chord.

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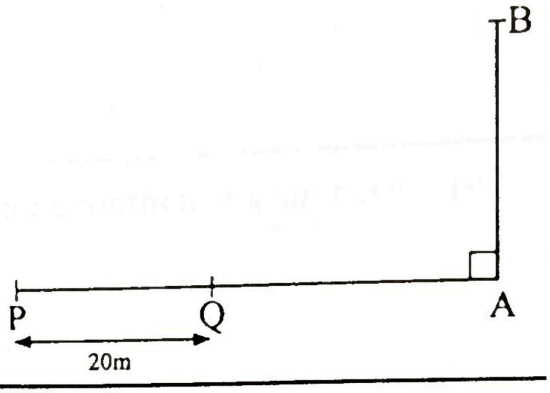
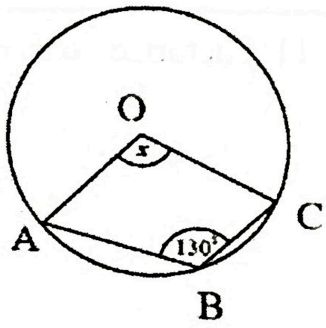
14) The base of the tower AB is A. Points A, Q and P lie on the same straight line. A child at Q observes the top of the tower B at an angle of elevation of 60^0, and the angle of depression of P from B is 20^0. Represent this information in the given figure.



15) If a custom duty of 12 000 rupees had to be paid when importing an electrical appliance worth 20 000 rupees, what was the percentage of custom duty charged for it?

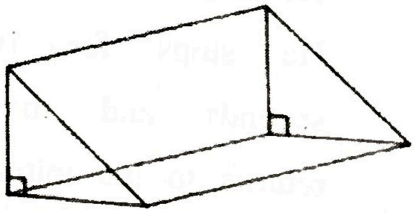
16) The centre of the given circle is O and $A\hat{B}C = 130^0$. Find the value of x.



17) Name the shapes of two different faces in shown in the prism in the figure.

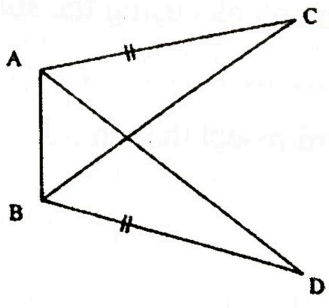
i. .....

j. .....



18) Find the least common multiple of the algebraic expressions $4ab$ and $6a^2b$.

19) Write down the remaining pair of sides required for triangle ABC and triangle ADB to be congruent under the case SAS.



3) Risith has obtained a loan amount of 500 000 rupees from a bank that charges an annual simple interest of 18%.

i. Find the interest that Risith has to pay per year for this.

ii. By lending the amount he had obtained to Ravindu for 5 years, Risith received a total amount of 1 100 000 rupees at the end of 5 years. At what annual interest rate did he lend this amount to Ravindu?

iii. After receiving the money from Ravindu, Risith fully repaid the loan he had taken from the bank, with the interest. How much profit does he now have?

iv. What percentage of the borrowed amount is the profit that Risith earned?

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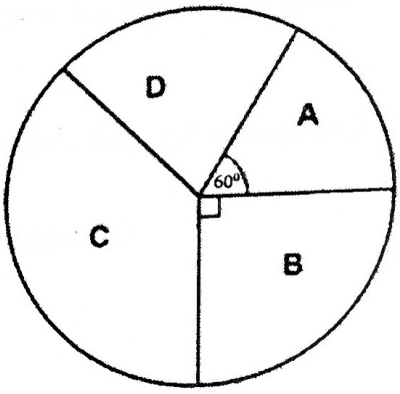
4) A, B, C and D are four political parties. This pie chart has been drawn based on the number of votes each of these four parties received in a certain election.



i. If party A received 14 400 votes and the central angle of the corresponding sector is 60^0, find the number of votes received by party B.

ii. If the number of votes received by party C is 32 400, what is the central angle representing party C?

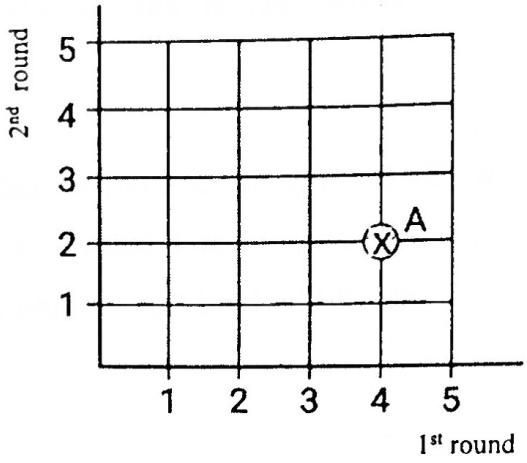
iii. Find the total number of voters who cast their votes.

iv. If during a recount, 480 votes for party C were added to the party D, find central angle corresponding to party D.

v. How many more votes has party C received than party B?

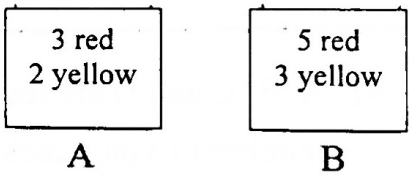
5) (a) In a Mathematics competition consisting of two rounds with 5 questions each, indicate the two questions that Nethuka received in the grid below using the symbol 'x'.

i. Explain the event A.

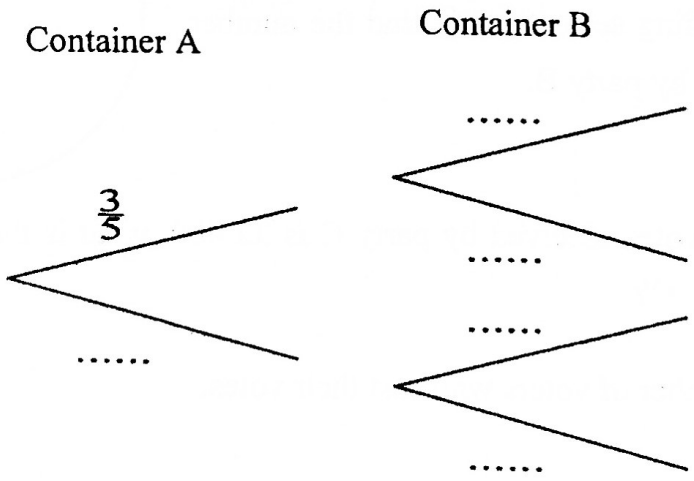


ii. Find the probability that the question number of both questions received by Nethuka is a prime number.

(b) Beads of the colors shown are placed into two containers, labeled A and B. Two beads are randomly selected one bead from each container.



i. Complete the tree diagram provided for the random experiment mentioned above.



ii. Find the probability that both beads taken are of the same color.

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மேல் மாகாணக் கல்வித் திணைக்களம்
Department of Education - Western Province

වර්ෂ අවසාන ඇගයීම
ஆண்டிறுதி மதிப்பீடு - 2026
Year End Evaluation

ශ්‍රේණිය தரம் Grade	10	විෂයය பாடம் Subject	Mathematics	පත්‍රය வினாத்தாள் Paper	II	කාලය காலம் Time	3 hours

- Answer ten questions selecting five questions from Part A and five questions from Part B.
- Write the relevant steps and the correct units in answering the questions.
- Each question carries 10 marks.
- The curved surface area of a right cylinder of radius r and height h is $2\pi rh$.
- The volume of a right cylinder of radius r and height h is $\pi r^2 h$.

Part A

Answer five questions only.

1) An incomplete table of y values corresponding to several x values 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 standard system of axes and a suitable scale, draw the graph of the given quadratic function on a graph paper according to the above table of values.

(b) Using the graph,

i. Write the interval of values of x on which the function is increasing positively.

ii. Find the roots of the equation $x^2 - 3 = 0$.

iii. Write the equation of the function that the given graph is translating three units downward along the y axis.

2) i. Find the value. $\lg 5 + \lg 12 + \lg 50 - \lg 3$

ii. Solve. $\lg x + \lg 8 = \lg 40 - \lg 5$

iii. Find the value using the logarithm table. $\dfrac{60.5 \times 7{\cdot}43}{18.75}$

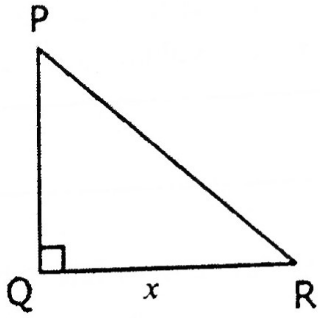
3) (a) 16 children have been selected for a school dance performance. The cost of a costume for a boy is 3 500 rupees and the cost of a costume for a girl is 5 500 rupees. The total cost for all the students' costumes is 76 000 rupees. Taking the number of boys as x and the number of girls as y,

i. Write the pair of simultaneous equations in terms of x and y.

ii. Solving the above pair of simultaneous equations find the number of boys and girls.

(b) Solve : $\frac{5}{x-3} + \frac{1}{2(x-3)} = 1\frac{3}{8}$

4) In right angled triangle, the sum of the length of the two sides which include the right angle is 17 cm. The length of one side of them is x cm. If the area of the triangle is $30cm^2$ find the length of the side PR by buildup the quadratic equation.



5) Sanuka wanted to determine the height of flag post installed at a house. From a window on an upper floor of a building located 20 m away from the base of the flag post, he observed the top of the flag post at an angle of depression is 35^0, and the base of the flag post at an angle of depression of 60^0. By drawing a scale diagram and using an appropriate scale, find the height of the flag post to the nearest meter.

6) When the masses of several sugar packets labeled as having a mass of 250 g were measured the following information was revealed.

Mass (kg)	234 – 236	237 – 239	240 – 242	243 – 245	246 – 248	249 – 251	252 – 254
No. of packets	2	12	18	32	28	6	2

i. Find the modal class of the frequency distribution given above.

ii. Taking the midpoint of the modal class as the assumed mean or by other method, calculate the mean mass of a sugar packet in this sample to the nearest gram.

iii. Assuming the price of 1 kg of sugar is 260 rupees, when a 50 kg pack of sugar is packed into 250 g packets and sold by a merchant, what is the extra profit he receives due to the mean mass of a sugar packet being less than that?

iv. Show that the additional profit he earns in a month by packing 8 sack of sugar into 250 g packets and selling them is approximately 2 500 rupees.

Part B

Answer five questions only.

7) Flower plants are planted in a garden such that there are 8 plants in the first row, and each subsequent row has 3 more plants than the preceding row.

i. Write down the number of plants in the first 4 rows respectively.

ii. If the number of plants in the rows forms an arithmetic progression, find the number of flower plants in the 14th row.

iii. Which row contains 86 plants?

iv. If the last row of this flower bed contains 86 flower plants, what is the total number of plants?

v. If all the flower plants in the exact middle row died, show that the number of remaining flower plants is greater than 1240.

8) Use only a straight edge with a cm/mm scale and a pair of compasses for the following geometric constructions. The construction lines should be drawn clearly.

i. Construct the straight line segment AB such that $AB = 8.5\ cm$.

ii. Construct a semicircle with AB as the diameter and mark the centre as O.

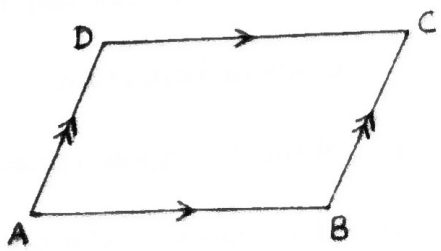
iii. Construct angle $B\hat{A}C$ such that point C lies on the semicircle and complete the triangle ABC.

iv. Find the magnitude of $A\hat{B}C$.

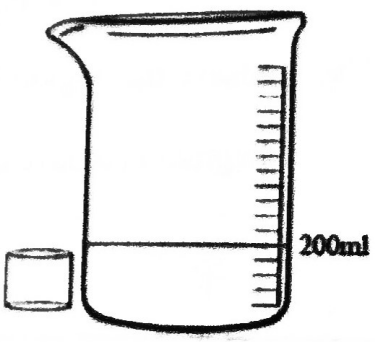
v. Construct a perpendicular from point C to the side AB. State the relationship between the perpendicular bisector of AB and the perpendicular drawn from C to AB.

9) ABCD is a parallelogram. The midpoint of AB is P. produced CP meets produced DA at E.

Show that ACBE is a parallelogram, and show that $\frac{1}{4}$ of area of DCE Δ = area of BPC Δ.



10) A measuring cylinder is filled with 200 ml of water. When 30 small cylinders each having a radius of r cm and height 1.4 cm are placed into the measuring cylinder, the water level rises to 233 ml. Show that the radius of a small cylinder is $\frac{1}{2}\ cm$ and find the curved surface area of that cylinder.



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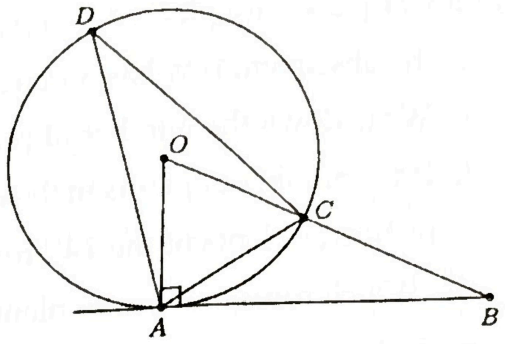
11) The centre of the given circle is O. The points D, A and C are lie on the circle. DA, OA, DC, OB and AB are straight lines. If $O\hat{A}B = 90^0$ and $A\hat{D}C = x$ then find the following angles in terms of x.



i. $A\hat{O}C$

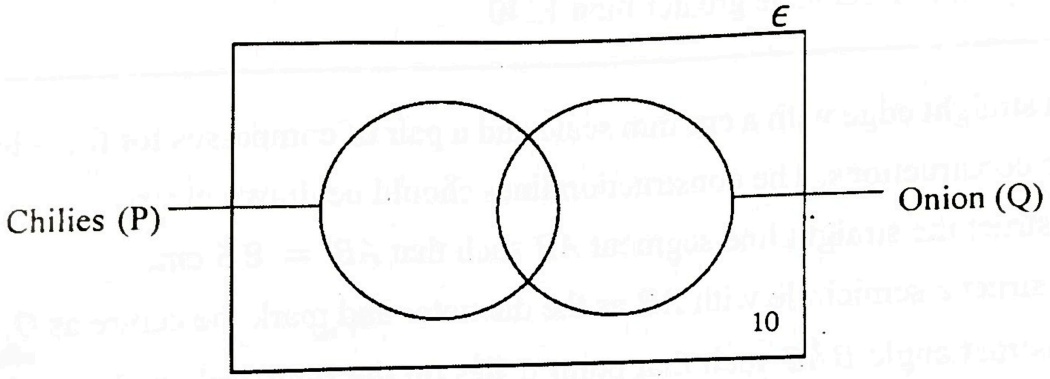
ii. $A\hat{B}O$

iii. $O\hat{A}C$

iv. $A\hat{C}B$

v. Show that $A\hat{D}C = C\hat{A}B$

12) There are 27 farmers who cultivate chilies and several farmers who cultivate onion in a farmers' society.



i. If there are 33 farmers who do not cultivate chilies, how many farmers cultivate only onions?

ii. The number of farmers who cultivate only chilies is 3 more than the number of farmers who cultivate both chilies and onions. Find the number of farmers who cultivate both crops.

iii. Write the region representing farmers who cultivate only chilies, using set notation.

iv. If all farmers who cultivate onions were to also cultivate chilies, represent this information in a different Venn diagram.

v. Shade the region representing farmers who cultivate only chilies in the Venn diagram you have drawn.

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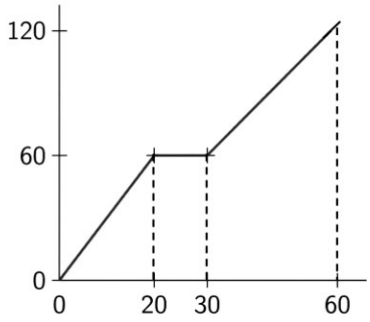
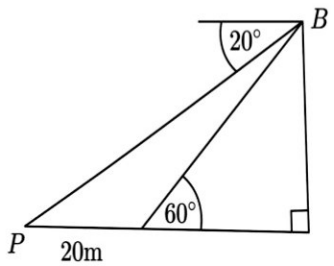
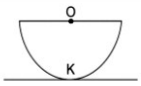
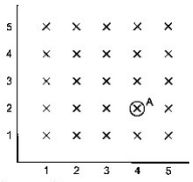
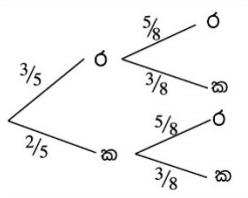
වර්ෂ අවසාන ඇගයීම - 2026
10 ශ්‍රේණිය - ගණිතය
ලකුණු ලබාදීමේ පටිපාටිය
i කොටස

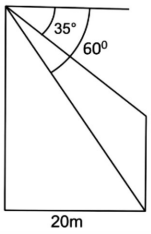
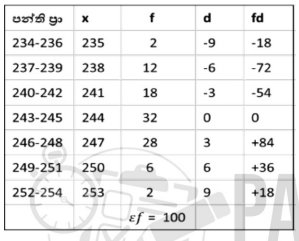
ප්‍රශ්න අංකය	පිළිතුර	ලකුණු
(1)	$\frac{18000 \times 8}{100}$ = 1440	1 1
(2)	$x + 65^0 = 115^0$, $x = 50^0$	1 1
(3)	$\frac{\frac{2 \times 3}{2 \times 5x} - \frac{3}{10x}}{\frac{3}{10x}}$	1 1
(4)	8 - 5 = 3	2
(5)	ACB < = 55^0 , BAC < = 70^0	2
(6)	(x − 6) (x ¬ 6) = 0 , x = 6 හෝ x = -6	2
(7)	20 x 6 = 120 m	2
(8)	N(S) = 40	2
(9)	X = 1 00	2
(10)	81 = 3^4	2
(11)	(3x + 2)(2x - 1)	2
(12)		2
(13)	කේන්ද්‍රයේ ලම්බයෙන්	1 1
(14)		

(15)	$\frac{12000\times100}{20000}$ = 60%	2
(16)	x = 360^0 - 260^0 100^0	1 1
(17)	සෘජුකෝණී ත්‍රිකෝණය සෘජුකෝණාස්‍රය	1 1
(18)	$12a^2b$	2
(19)	CAB < = ABD <	2
(20)	x < b උපරිම අගය 5	2
(21)	27 + 54 - 71 = 10	2
(22)	OA = 13cm	2
(23)	22cm	2
(24)	3x + 3y = 12 x + y = 4	1 1
(25)		1 1

B කොටස

ප්‍රශ්න අංකය	පිළිතුර	ලකුණු
1	i $1 - \frac{3}{8} = \frac{5}{8}$ ii $\frac{5}{8}$ න් $\frac{2}{5} = \frac{2}{8} = \frac{1}{4}$ iii $\frac{2}{8}$ = 2.4 මිලියන 6.4 iv $\frac{720}{30} = 24$	2 2 2 2
2	i 7cm ii $\frac{1}{2} \times \frac{22}{7} \times 7 \times 7 = 77cm^2$ iii $\frac{77\times8}{28} = 22cm$ iv චාප දිග = $2 \times \frac{22}{7} \times 7 \times \frac{1}{2}$ = 22cm පරිමිතිය = 22 + 7 + 7 +22 + 22 + 28 = 108cm	2 1 + 1 1 + 1 1 1 1 1
3	i 500 000 $\times \frac{18}{100}$ 90 000 ii 1 100 000 – 500 000 $\frac{600000}{5} = 120000$ $\frac{120000 \times 100}{500000} = 24\%$ iii 90 000 x 5 = 450 000 600 000 - 450 000	1 1 1 1 1 + 1

	රු. 150 000 iv $\frac{150000}{500000} \times 100 = 30\%$	1 1 1 + 1
4	i 21600 ii 135^0 iii 86400 iv $75 + 2 = 77^0$ v 32400 – 21600 10800	2 2 2 2 1 1
5	a i  ii පළමු වටයේ ප්‍රශ්න අංක 4 ද, දෙවන වටයේ ප්‍රශ්න අංක 2 ද ලැබීම b i  ii $\frac{15}{40} + \frac{G}{40} = \frac{21}{40}$	2 2 4 1 + 1
	ගණිතය ii පත්‍රය	
1	a) i. Y = 3 ii. අක්ෂ නම් කිරීම නිවැරදි ලක්ෂ්‍ය පහකට සුමට වක්‍රයට b) i. -1.7 < x < 0 ii. x = -1.7 හෝ x = +1.7 iii. $y = -x^2$	1 1 1 1 2 2 2
2	a) i. $\lg\left(\frac{5 \times 12 \times 50}{3}\right)$ lg 1000 3 ii. $\lg(x + 8) = \lg\left(\frac{40}{5}\right)$ 8x = 8 X = 1 iii. lg 60,5 + lg 7.43 – lg 18.75 1.7818 + 0.8710 - 1.2730 1.3798	1 1 1 1 1 3 1 1

3	a) x - y = 16 --- (1) 3500x + 5500y = 76000 --- (2) y = 10 x - 10 = 16 x = 6 b) $\frac{5}{x-3}+\frac{1}{2(x-3)}=1\frac{3}{8}$ $\frac{10+1}{2(x-3)}=\frac{11}{8}$ 2(x – 3) x 11 = 11 x 8 X – 3 = 4 X = 7	1 1 2 2 4
4	PQ = 17 – x $\frac{1}{2}$ (x)(17 – x) = 30 X (17 – x) = 60 17x - x^2 = 60 X^2 - 17x + 60 = 0 (x - 12) (x - 5) = 0 X = 12 හෝ x = 5 $PR^2 = 12^2 + 5^2$ = 144 + 25, PR = 169, PR = 13	 10
5	 පරිමාණය ගැනීමට 20m ගැනීමට 35^0 ට 60^0 ට නිවැරදි රූපයට කණුවේ උස ලොකුකිරීමට 21 m ± 1 = 20.64	 1 2 2 2 1 2
6	 Σfd = −144 + 138 Σfd = −6 i. 243 - 245 ii. මධ්‍යන්‍යය $=\frac{\varepsilon fd}{\varepsilon f}$ $=244+\left(\frac{-6}{100}\right)$ 243.94 = 243.9	1 (x) 1 (d) 2 (fd) 1 1 1

පන්ති ප්‍රා	x	f	d	fd
234-236	235	2	-9	-18
237-239	238	12	-6	-72
240-242	241	18	-3	-54
243-245	244	32	0	0
246-248	247	28	3	+84
249-251	250	6	6	+36
252-254	253	2	9	+18
		εf = 100		

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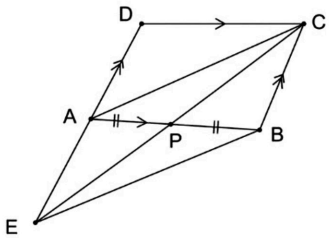
	iii. පැකට් ගණන $= \frac{50000}{250} = 200$ අඩුවන සීනි ප්‍රමාණය = 200 x(250 – 244) = 1200 g = 1.2 kg = ලාභය (අමතර) = 260 x 1.2 = 312.00 iv. 312 x 8 = 2496	1 1 1
7	i. 5, 8, 11, 14, 17, ... ii. $Tn = 8 + (14 - 1)\,3$ = 8 + 39 = 47 iii. 86 = 8 + (n-1) 3 78 = (n-1) 3 n - 1 = 26 n = 27 iv. $s_n = \frac{27}{2}(8 + 86) = \frac{27}{2} \times 94 = 1296$ v. 1296 - 47 = 1249 1249 > 1240	1 2 2 3 1 1
8	i. AB = 8.5 cm ii. රේඛාව ලම්බ සමච්ඡේදනයට අර්ධ වෘත්තයට කේන්ද්‍රය O නම් කිරීමට iii. 30^0 නිර්මාණයට D ලක්ෂ්‍යය ලකුණු කිරීමට iv. ADB = 60^0 v. ලම්බය නිර්මාණයට සම්බන්ධයට (// බව)	1 2 1 1 2 1 1 1
9		10

10	BCP Δ හා AEP Δ සලකමු.
	AP = PB (දී ඇත)
	APE < = CPB < (ප්‍රතිමුඛ කෝණ)
	CBP< =PAE < (CBP <= ADC, ADC < = PAE අනුරූප කෝණ)
	BCPΔ ≡ AEP Δ (කෝ කෝ පා)
	AE = AE // BC (දී ඇත)
	ACBE සමාන්තරාස්‍රයක් වේ.
	BPCA ච.ව =AEPΔ
	BPC Δ ව ඵ = APCΔ ව ඵ
	(ආධාරක පාදය සහ එකම සමාන්තර රේඛා අතර පිහිටීම නිසා)
	$\frac{1}{4}$ DCE ව ඵ = BPC ව ඵ
		3
		
		4
		
		3

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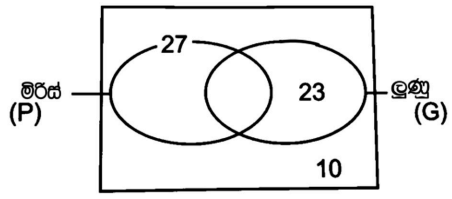
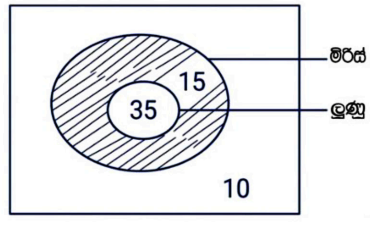
	i. 90 - x (.....) ii. 90 - 2x (.....) iii. 90 - x (.....) iv. 90 + x (.....) v. CAB< = 90^0 - (90 – x) = x ADC < = CAB < වේ.	2 2 2 2 2
11	$\frac{22}{7} xr^z \times 3 \cdot 4 \times 30 = 33$ $r^2 = \frac{33 \times 7}{22 \times 24 \times 30}$ $r^2 = \frac{1}{4}$ r = $\frac{1}{2}$ cm $2\pi rh = 2 \times \frac{22}{7} \times \frac{1}{2} \times 1 \cdot 4$ $= 4.4\ \text{cm}^2$	2 1 2 1 2 2
12	 i. 23 ii. x + 3 + x = 27 x = 12 දෙකම වගා කරන 12 iii. Q' ∩ P iv.  v. අඳුරු කිරීමට	1 2 2 2 2 1

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