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ஊவா மாகாண கல்வித் திணைக்களம்

Uva Provincial Department of Education



අ.පො.ස. (සාමාන්‍ය පෙළ) - පෙරහුරු පරීක්ෂණය - 2019

Grade 11

Mathematics I

Time - 2 hours

Part A

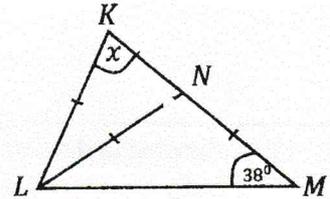
- Answer all the questions on this paper itself.

1. Write between which whole numbers does the $\sqrt{72}$ lie.

2. 15% of value added tax is charged for the water bill. If the value of the bill without above tax is Rs 6 000 then find the value of it including the tax.

3. Simplify $\frac{2x^2}{14y} \times \frac{7y}{4y}$

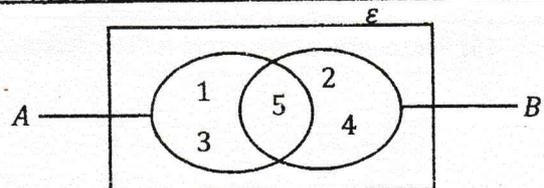
4. According to the data given in the diagram find $\angle RKN$



5. If the sum is correct put a tick (\checkmark) and if not correct put a cross (\times)

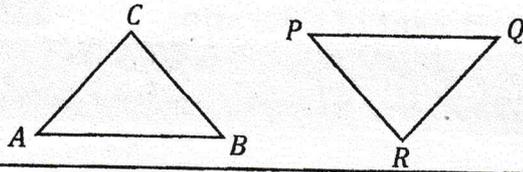
Statement	Solution	\checkmark or \times
$\frac{1}{2a} + \frac{3}{a}$	$\frac{4}{2a}$	
$\frac{2}{a} - \frac{3}{5a}$	$\frac{7}{5a}$	

6. Write A' with its elements.



7. Amal had Rs 1 600 and expensed $\frac{2}{5}$ of it. Find the amount of money that he expensed.

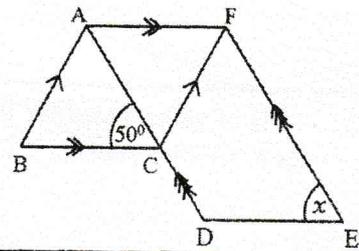
8. $ABC \Delta$ and $PQR \Delta$ are congruent triangles. Accordingly fill spaces.



$AC = PR$
 $\dots\dots = \dots\dots$
 $BC = PQ$
 $ABC \Delta \equiv PQR \Delta$ (S. A. S)

9. $3x - 2y = 10$
 $2x - 3y = 15$ Without solving the simultaneous equation find $(x - y)$

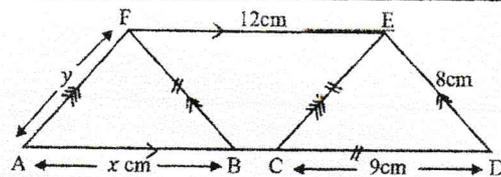
10. According to the data given in the diagram find $\hat{D}EF$



11. A certain 10 machines produce 400 items within 6 hours. If 8 machines are used for this task then find the time taken to produce the same number of items.

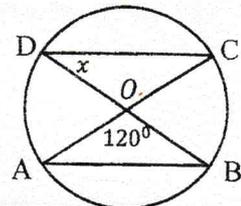
12. The solution of $(x + 3)(2x + a) = 0$ are $x = -3$ or $x = -2$. Hence find "a"

13. According to the data given in the diagram find x and y

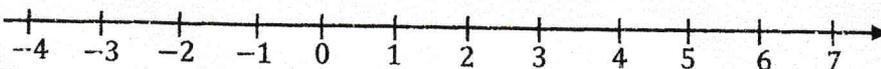


14. 3 cards written letters T E A are in a box. A card is taken out at random and checked the letter. Find probability of the card being a letter with a vowel in English Alphabet.

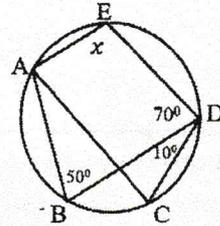
15. The centre of the circle is "O". According to the given data, find $\hat{C}DB$



16. Represent the solution $3x \leq 6$ on the given number line.

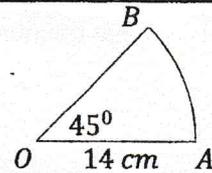


17. The points A, B, C, D and E lie on the circle. Find \widehat{AED}



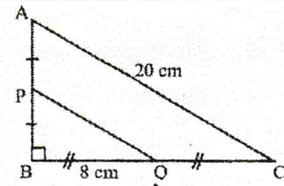
18. A vehicle travels a distance of 90 km within 2 hours. Find its speed.

19. Find the arc length AB of the given sector.

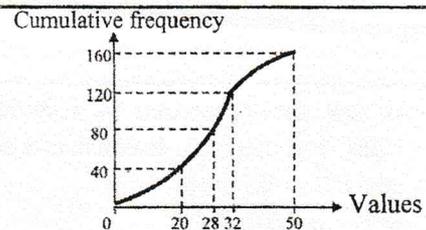


20. Write the gradient of the straight line of intercept 3 and it crosses the co-ordinate $(2, 5)$

21. P and Q are the mid points of the sides AB and BC respectively of the right angled triangle. $\widehat{ABC} = 90^\circ$. Accordingly find PB

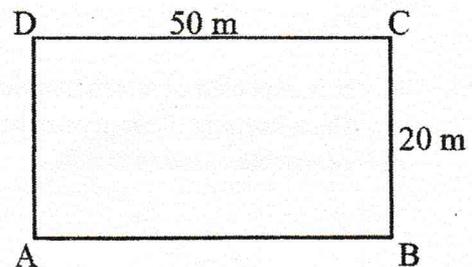


22. Find inter-quartile range of the cumulative frequency curve given below.

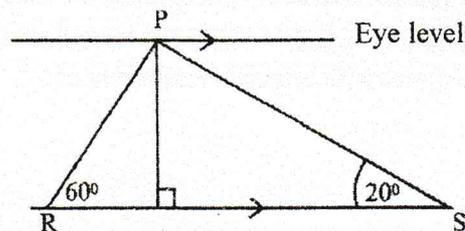


23. Find volume of a right prism of cross sectional area 25 cm^2 and length 12 cm .

24. $ABCD$ is a rectangular shaped land plot. Mark a point P equidistant from the boundaries DC and BC and also situated on AB using the knowledge of loci.



25. Mark the angle of depressions of R and S as seen from P and write the relevant angles on the diagram given below.



Part B

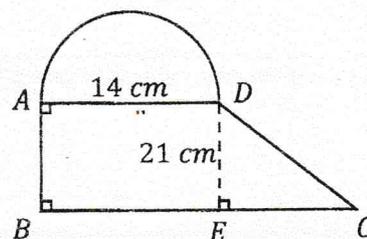
Sunimal expensed $\frac{1}{3}$ of his salary for foods and $\frac{1}{5}$ for education. He expensed $\frac{3}{7}$ of the remainder for buying clothes. Finally he remained Rs 16 000.

- i. Write as a fraction the amount that he expensed for foods and education out of his total salary.
- ii. What fraction that he expensed for clothes out of the total salary?
- iii. Find his monthly salary.
- iv. He expensed another $\frac{1}{4}$ of the above remainder for medicine. Then write his remainder in rupees.

2. A task sheet prepared by a student for a certain Activity based evaluation is shown in the following diagram. It consists a shape of a trapezium and semi-circular portion $BC = 42 \text{ cm}$ and $DC = 35 \text{ cm}$.

i. Find EC .

ii. Find the arc length of AD .



iii. It is expected of attach marbles around the whole task sheet keeping 3 cm gaps in between each. Find the number of marbles need to attach.

iv. A rectangular lamina, of $\frac{1}{4}$ times the area of the trapezium should be attached along BC boundary. Draw it on the diagram with relevant measurements.

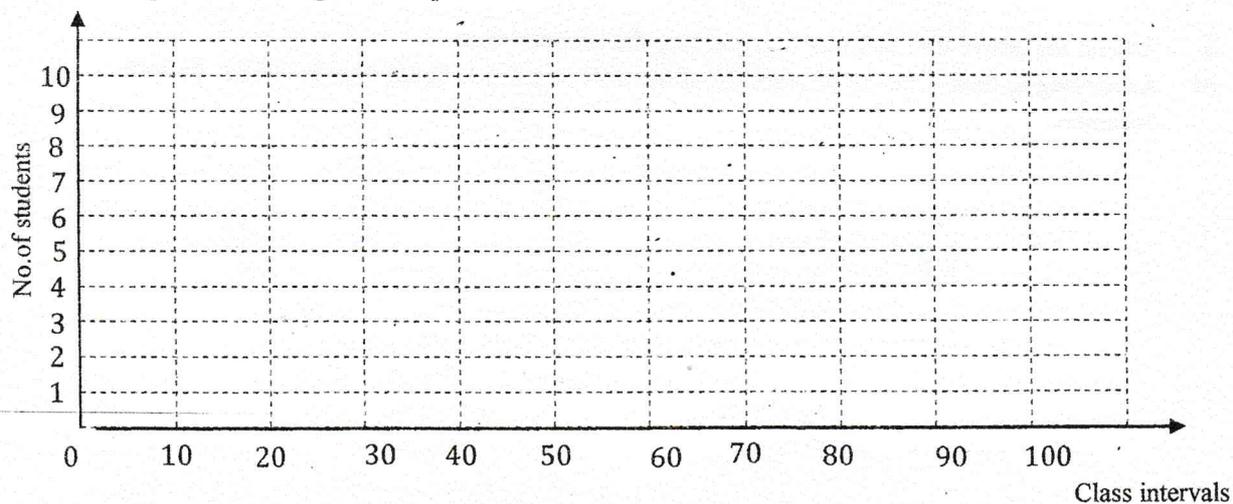
3. a. The quarterly assessment tax of a certain house in a certain urban area is Rs 3 600.
- i. Find the annual assessment tax amount.
 - ii. If the annual percentage assessment tax charged is 12%, find the annual assessed value of the house.
- b. The production cost of an article made in a foreign country is Rs 46 000 in sri Lankan currency. A 40% custom duty was charged when importing it.
- i. Find the amount of custom duty in rupees.
 - ii. 15% profit is expected when selling it. Find the selling price of it.

4. The following frequency distribution table represents marks obtained by a group of students for a subject in a term test.

- i. If the total number of students is 40, then find the marks obtained in the class interval 20-30.

Marks	Number of students (f)
0 – 10	3
10 – 20	4
20 – 30
30 – 50	8
50 – 60	8
60 - 90	9

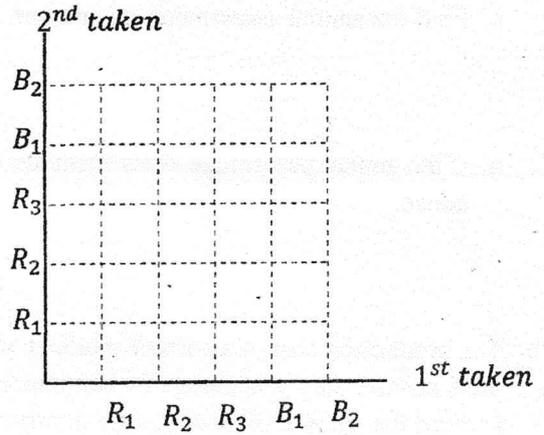
ii. Complete the histogram to represent above data.



- iii. According to the histogram draw the frequency polygon.
- iv. Write the number of students received marks greater than 50 as a percentage of the total number of students.

5. a. Out of 5 identical pebbles in a box, 3 are red and 2 are blue, Two pebbles are taken out in succession at random without a replacement.

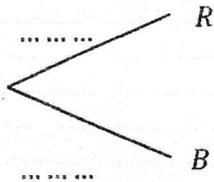
i. Represent all possible outcomes in the given grid.



ii. Find the probability of the taken pebble being the same coloured one.

b. If the first taken pebble is not a red one, it is replaced to the box and again pebble is taken at random.

i. Represent the event that the first taken pebble is being red or blue in the following tree diagram. (R- Red and B-Blue)



ii. Extend the above tree diagram representing the second taken.

iii. According to that write the probability of the pebble taken is being blue in colour in both occasion.