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மேல் மாகாணகல்விதிணைக்களம்
Western Provincial Education Department

දෙවන වාර ඇගයීම - 2018
இரண்டாம் வகுதவணைமதிப்பீடு - 2018
Second Term Evaluation - 2018

11 ශ්‍රේණිය
தரம் 11
Grade 11

ගණිතය 1 පත්‍රය
கணிதவினாதாள் - 1
Mathematics Paper - I

පැය දෙකයි
இரண்டுமணிநேரம்
Two Hours

Name/ Index No -----

Signature of Invigilator

Important:

- This paper consist of 8 pages
- Write your **index no** correctly in the appropriate place on the **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 follows :
02 marks each for questions 1 – 25 in part A
10 marks each for questions in part B.

For marking examiner'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. If the annual rates that should be paid for a house with the annual assessed value of Rs. 60 000 is Rs. 2 400, how much should be paid for a quarter?

2. The area of the curved surface of a cylinder with the total surface area of $1\ 188\text{cm}^2$ is 880cm^2 . The area of the base of it is,

i. 308cm^2

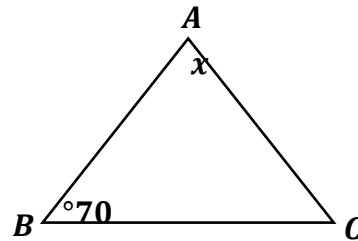
ii. 154cm^2

iii. 616cm^2

3. Find the 8th term of the Geometric progression 3, 6, 12,($2^7 = 128$)

4. Factorize. $x^2 - 4x - 21$

5. In the triangle ABC, $AB = AC$. Find the value of x .



6. 5 men take 4 days to complete half of a certain work. How many mandays are there in the total work?

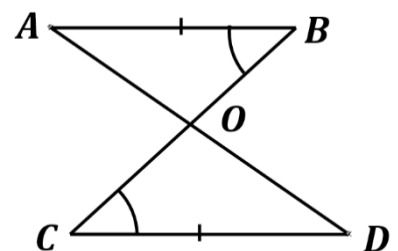
7. Simplify. $\frac{y}{3} \div \frac{4y}{x}$

8. The triangles ABO and COD are congruent under A. A. S case. Write the remaining step to show that they are congruent.

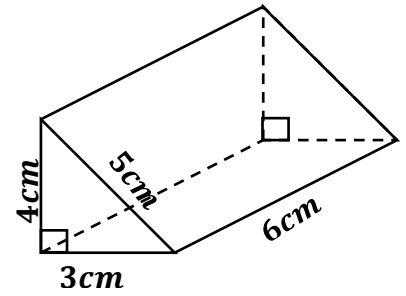
$AB = CD$ (Given)

$\hat{A}BO = \hat{O}CD$ (Given)

..... =(.....)



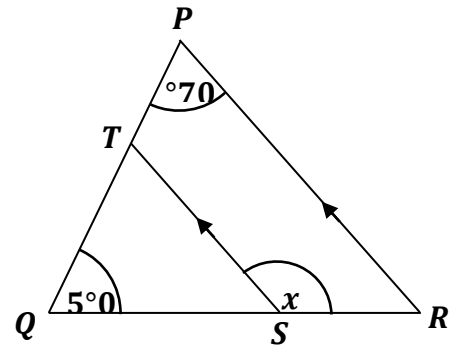
9. Draw sketches of two faces of the given triangular prism with relevant measurements, except the triangular faces.



10. $S = \{ x ; x \text{ is a multiple of } 7, 0 < x < 30 \}$ Describe this set in another method.

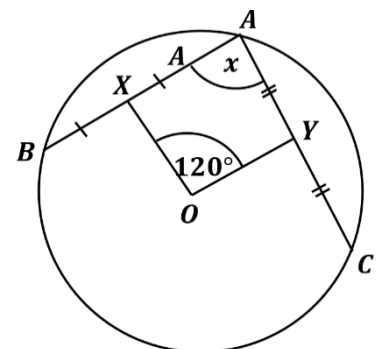
11. Find the least common multiple of the given algebraic terms. $x^2, 2xy, 3y$

12. In the figure, $PR \parallel ST$. If $\angle PQR = 50^\circ$ and $\angle QPR = 70^\circ$, find the value of x .

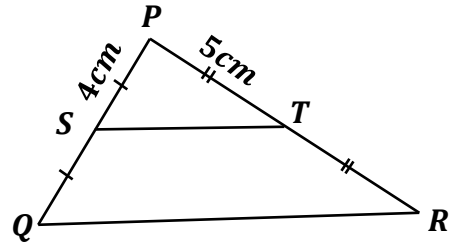


13. What is the smallest positive integer which satisfy the inequality $3x - 1 \geq 5$?

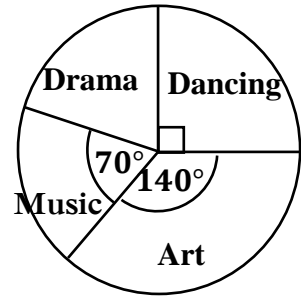
14. In the circle with the center O, AB and AC are two chords. The mid points of AB and AC are X and Y respectively. If $\angle XOY = 120^\circ$, find the magnitude of $\angle BAC$.



15. If the perimeter of the triangle PQR is 28cm, find the length of the side ST.

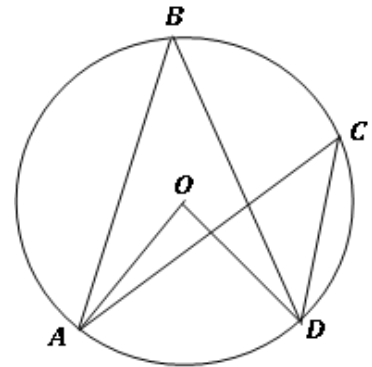


16. The pie chart represents a group of grade 11 students who learn art, dancing, music and drama. If the number of students who learn dancing is 45, how many students learn drama?

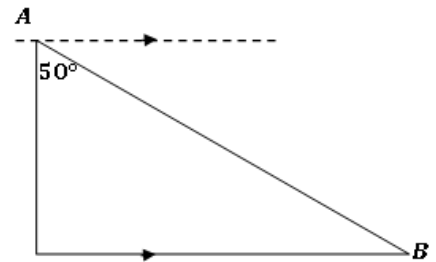


17. Figure shows a circle with the center O. the points A, B, C and D are situated on the circle. Accordingly if the following statements are true put ✓ and if they are wrong put ✗ in the given box.

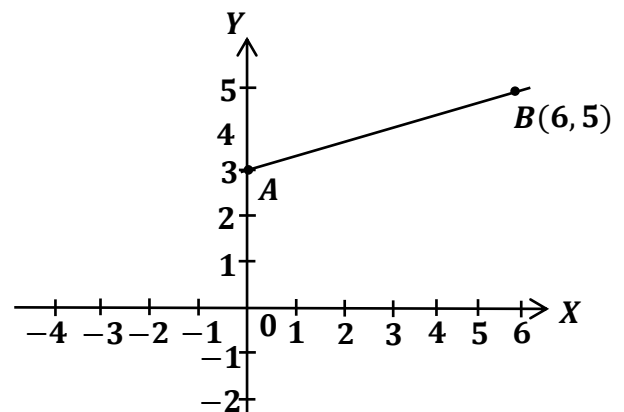
$\widehat{AOD} = 2\widehat{ABD}$	
$\widehat{ABD} = \widehat{ACD}$	



18. According to the information given in the figure, explain the location of B from A with respect to angle of elevation.



19. Find the gradient of the straight line AB shown in the Cartesian plane.

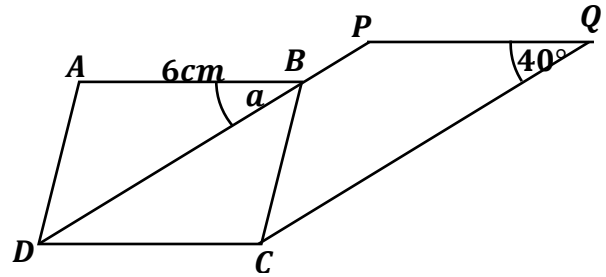


20. ABCD and CDPQ are two parallelograms.

According to the given information, find

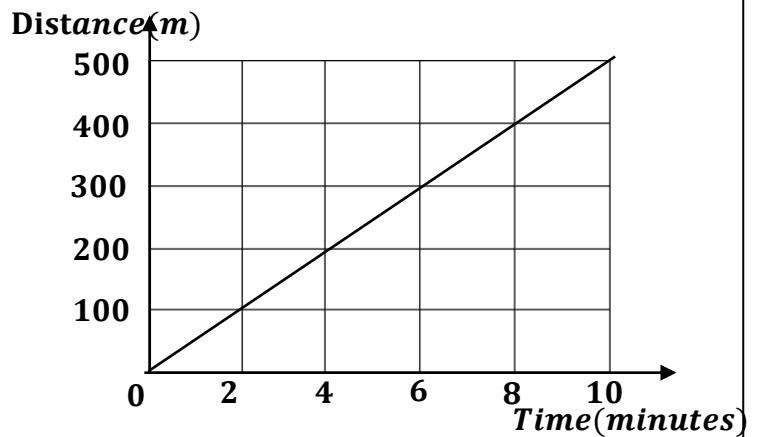
i. PQ length.

ii. Value of a .



21. Express in logarithmic form. $64 = 2^6$

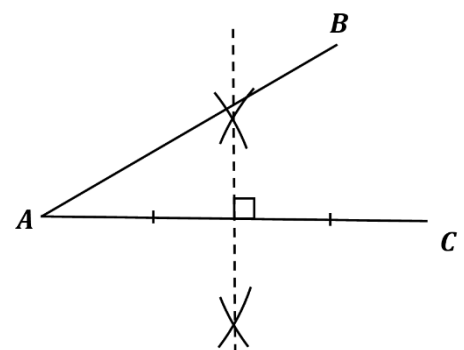
22. The graph illustrates the how Thilina traveled to school from his house. Express his speed in meters per minute.



23. Solve the equation. $(x - 2)(x + 1) = 0$

24. Find the probability of obtaining a number greater than 4, when rolling an unbiased die marked 1 to 6 on its faces.

25. In the figure, AB and AC are two boundaries of a land. A telephone post is needed to be fixed equidistant to the two boundaries and equidistant to A and C. Using the knowledge of loci, mark the relevant location (x) in the figure.



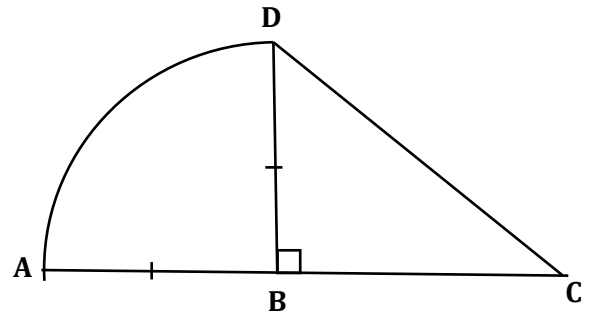
Part B

Answer all the questions on this paper itself.

1. $\frac{1}{8}$ of a water in a tank which is completely filled with water, is used during the morning.
 - i. Express the quantity of water remaining in the tank as a fraction.
 - ii. $\frac{5}{7}$ of the remaining quantity of water is used during the evening. What fraction of the whole quantity of water is used during the evening?
 - iii. If the remaining quantity of water in the tank after that is 250l, find the capacity of the tank.
 - iv. If the water is supplied to the tank at a uniform rate of 50 litres per minute, how many minutes will it take to fill the tank completely?
 - v. If it is a cubic shaped tank with the area of the base $1m^2$, find the height of the tank.
2. (a) Induwara sold 500 shares that he owned for Rs. 40 000, after having a capital gain of Rs. 4000.
 - i. What is the market price of a share when he is selling it?
 - ii. How much did he invest to buy the shares?
 - iii. At what market price of a share when he is buying it?
 - iv. If the company pays a dividend of Rs. 6 per share, what is the dividend gained by Induwara?

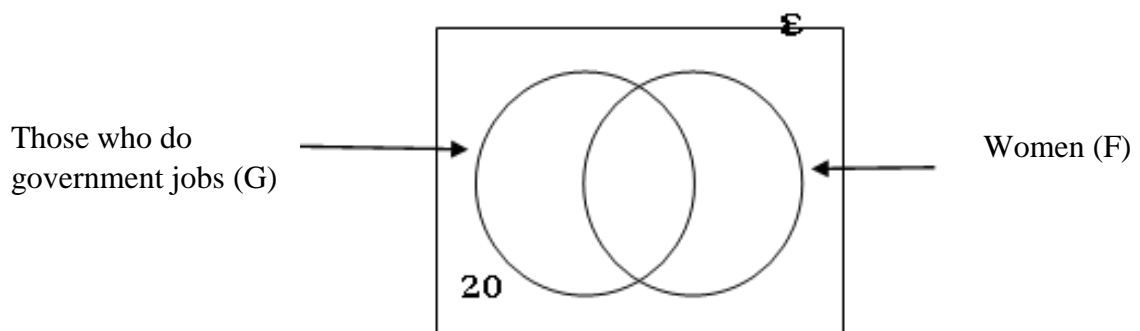
(b) Jeseema deposited Rs. 40 000 for an annual compound interest rate of 10%. Calculate the total amount she receives after two years.

3. The figure shows a part of a decoration. It is made of DBC right angle triangular portion and a sector with the angle at the centre 90° and the radius 7cm. (take $\pi = \frac{22}{7}$ for the following calculations)



- i. Find the area of the sector ABD.
- ii. If the area of the portion BCD is equal to the area of ABD sector, find BC length.
- iii. Find AD arc length.
- iv. If DC length to the nearest centimeter is 13, find the perimeter of the decoration to the nearest centimeter.
- v. Instead of the ABD portion, a rectangular shaped portion with the same area of ABD is needed to attach to the same side, taking DB as one side of the rectangle. Draw a sketch of it with relevant measurements in the same figure.

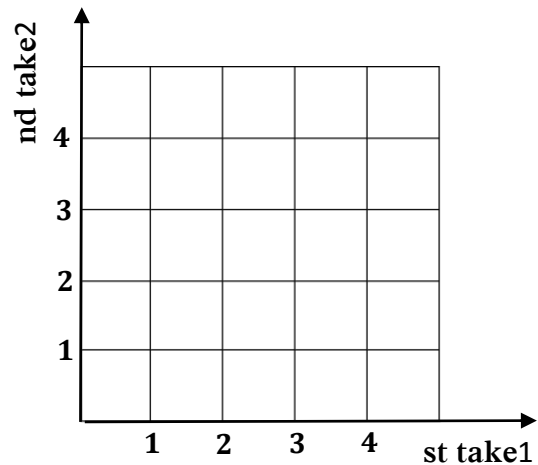
4. (a) Out of 100 people in a certain village, 53 do government jobs.
- i. How many of them don't do government jobs?
 - ii. If 49 of the whole group are women, complete the following Venn diagram using the given information.



- iii. How many men among the total group do government jobs?

(b) In a box, there are 4 identical cards marked 1 to 4 on each. A card is taken out of the box, marks its number and after putting that card into the box, another card is taken out and marks the number.

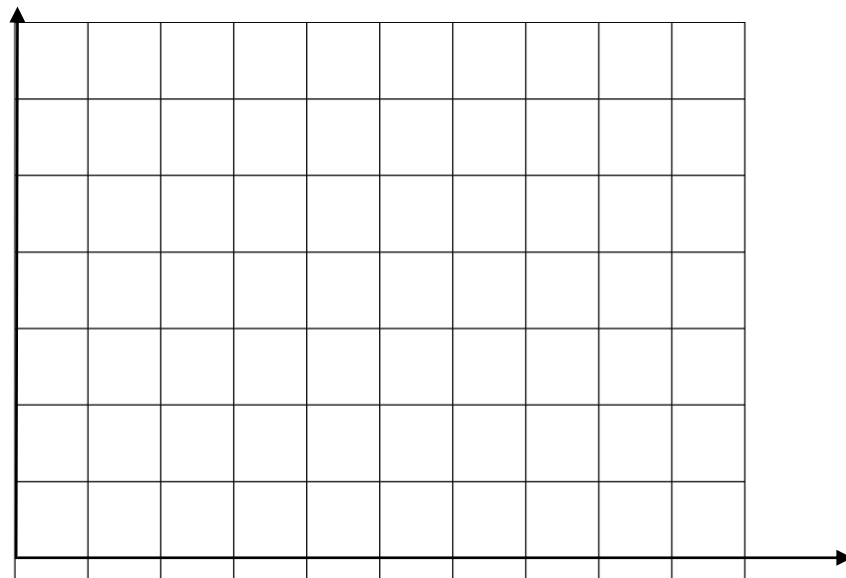
- i. Represent the sample space on the grid.
- ii. Find the probability of getting two cards in such a way that the sum of the numbers obtained in both occasions be 5.



5. Following table of values represent the marks obtained by a group of students for a mathematics paper. (20 – 30 means greater than or equal to 20 and less than 30)

Marks	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 100
No of students	3	4	10	7	6	6

- i. What is the height of the column which should be used to represent the number of students in the class interval 70 – 100 in a histogram?
- ii. Represent the above information in a histogram on the given grid.



- iii. Draw the frequency polygon for the histogram.
- iv. Express the number of students who scored more than 60 marks as a fraction of total number of students.