



1<sup>st</sup> Term - Model Paper

Grade 11

Mathematics

Time: 2 1/2 hrs

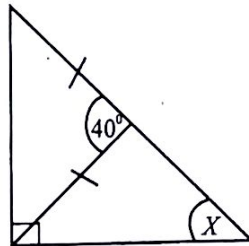
Name : ..... Class/Grade: .....

❖ Answer all questions on this paper itself.

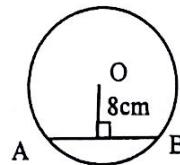
(1) Simplify,  $\frac{1}{x} + \frac{1}{2x}$

(2) Write all the positive integers which satisfy the inequality.  
 $2x + 1 \leq 5$

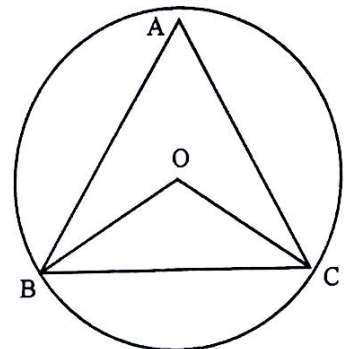
(3) Find the value of x



(4) The figure depicts a circle with centre O and the radius 10cm.  
Find the length of the chord AB

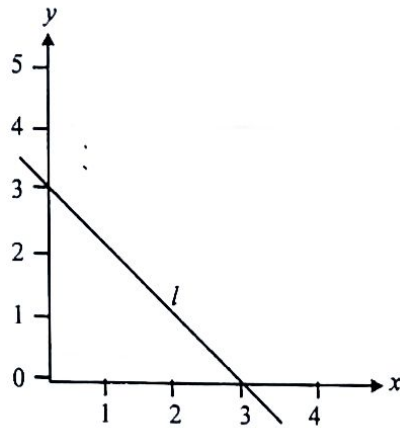


(5) The apex of ABC equilateral triangle lies inside a circle with centre O.  
Find the magnitude of the angle BOC



(6) A and B are two sets. If  $n(A) = 5$ ,  $n(B) = 7$  and  $n(A \cup B) = 10$ , find the value of  $n(A \cap B)$

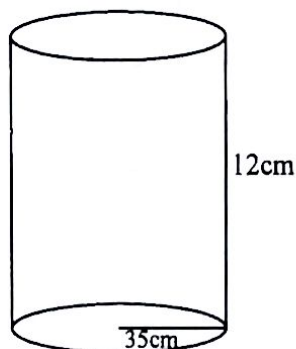
(7) Write down the equation of the straight line which represents by  $l$



(8) To complete a certain task it takes 9 men 8 days. How many days are required to complete the half of the above task by 4 men.

(9) In an arithmetic progression the common difference is 3 and the 19th term is 32. Find the 1st term.

(10) Find the surface area of the cylinder with radius 35cm and height 12 cm.

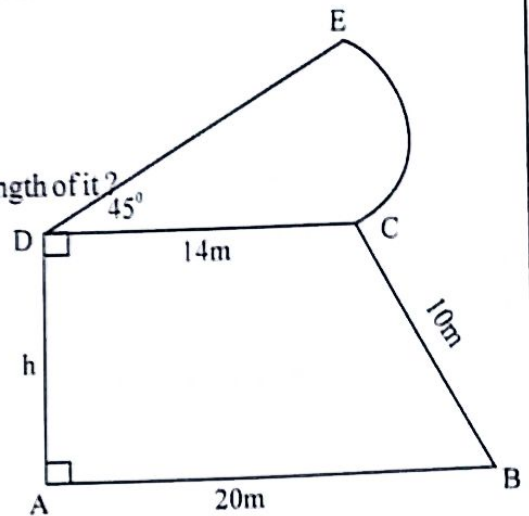


## PART B

- (01) A father sold  $\frac{3}{8}$  of his land and  $\frac{2}{5}$  of the remaining was given to his daughter. The remaining land he kept for himself.
- What fraction of land is remaining after selling?
  - What fraction of the whole land was given to the daughter?
  - If daughter received 20 perches, how many perches in whole land?
  - If again father donates  $\frac{1}{3}$  of the remaining land to build a public hall, how many perches he donated?

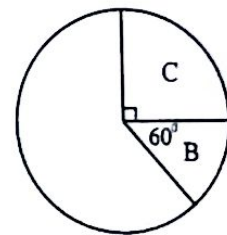
- (02) The figure depicted a model of form which is an exhibit in an exhibition. It consist of the sector DEC as a pond and the trapezium ABCD as the land.

- Find the arc length of the pond.
- Find the value of  $h$
- If a protective fence is around the model, find the length of it?
- Find the surface area of the pond.
- Find the whole area of the model.



- (03) Mr. Perera imports electronic balances. The import price of a balance is Rs. 20,000/= and the customs duty is Rs. 40,000/=
- Find the percentage of the customs duty.
  - If he marked the price in a balance with 25% profit, find the marked price.
  - When selling a balance, a discount was given and 15% VAT is added to the selling price. If Rs. 4200/= is added as VAT. What is the selling price of an electronic balance without VAT.
  - The annual income of Mr. Perera is Rs. 1,100,000/=. The initial rs. 500,000/= is tax free. If 4% of tax percentage is charged for the remaining amount, find the income tax he has to pay.
- (04) The following table represents the mathematics results of G.C.E. (O/L) in the year 2018 of G/ Gemunu College.

	A	B	C	S	W
Angle of the sector	$30^\circ$	$60^\circ$	$90^\circ$	.....	$60^\circ$
No. of students	12	24	.....	48	24

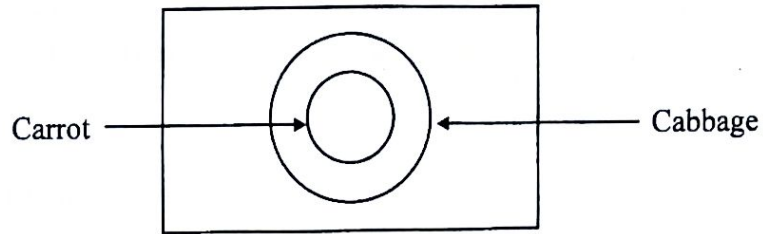


- How many students got C passes?
- Complete the table and represent the data in the pie chart.
- What is the credit obtained by the most no of students?
- Shade the region of pass students in the pie chart.
- $\frac{1}{8}$  of the fail students were passed after re correction. If so, find the number of students who were failed.



(05) In a society of farming there are 40 members who are farming Carrot and Cabbage. Here are the details of them.

- \* The no. of farmers who cultivate only Cabbage is 15.
- \* All the farmers who are cultivating Carrot, cultivating Cabbage also.
- \* 8 farmers are not cultivating either Carrot or Cabbage.



- (i) Complete the venn diagram according to the given details.
- (ii) How many farmers cultivate the both ?
- (iii) How many farmers cultivate at least one of these vegetables ?
- (iv) Shade the region who cultivate only Cabbage.
- (v) What is the probability of cultivating both these types.