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 Department Of Education – Western Province
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මෙல் மாகாணக் கல்வித் திணைக்களம்
Department of Education – Western Province

අවසාන වාර ඇගයීම
ஆண்டிறுதி மதிப்பீடு - 2019
Third Term Evaluation

ශ්‍රේණිය தரம் } 10 Grade	විෂය படம் } Mathematics Subject	පත්‍රය வினாத்தாள் } I Paper	කාලය காலம் } 2 Hours Time
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Name / Index number _____

Signature of Invigilator

Important:

- This paper consists 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

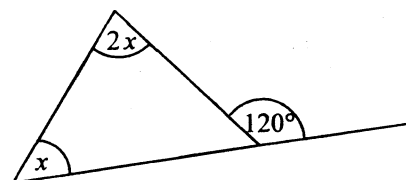
Answer all the questions on this paper itself.

01. When an electrical item worth Rs.75 000 is imported, 20% of its value has to be paid as customs duty. Find the value of the electrical item after paying the duty.

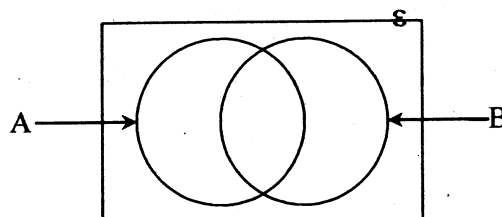
02. Simplify. $\frac{5}{P} - \frac{3}{4P}$

03. Write in index form. $\log_a x = y$

04. According to the given information, find the value of x .



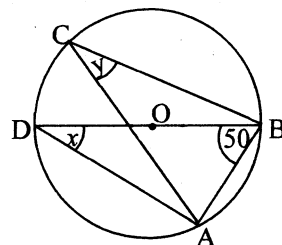
05. Shade the region $A' \cap B$ in the given Venn diagram.



06. Solve. $\frac{x+2}{3} = 5$

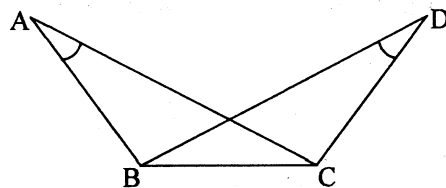
07. Find the least common multiple of 18 and $12x^2y$.

08. Center of the given circle is O. According to the given information, find the values of x and y .



09. Find the distance that a car which travels at a uniform speed of 84 kmh^{-1} , covers in 5 minutes.

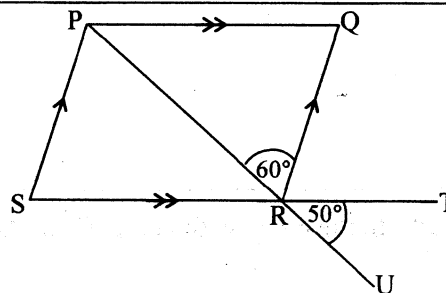
10. In the given figure, $\hat{BAC} = \hat{BDC}$. Write a pair of angles that should be equal to make the two triangles congruent under A. A. S case.



11. Curved surface area of a cylinder with the area of the base 14 cm^2 is 704 cm^2 . Calculate its height. (Curved surface area of a cylinder with the radius r and the height h is $2\pi rh$)

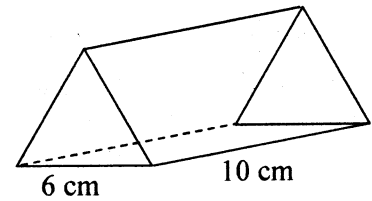
12. Solve. $x(x-3) = 0$

13. In the parallelogram PQRS, side PR is produced to U and side SR is produced to T. $\hat{TRU} = 50^\circ$. $\hat{PRQ} = 60^\circ$. Find the magnitudes of \hat{SRP} and \hat{SPQ} .



14. X and Y are mutually exclusive events. If $P(X) = \frac{1}{4}$ and $P(Y) = \frac{1}{3}$ find $P(X \cup Y)$.

15. If the area of the cross section of the given prism is 10 cm^2 , find its volume.

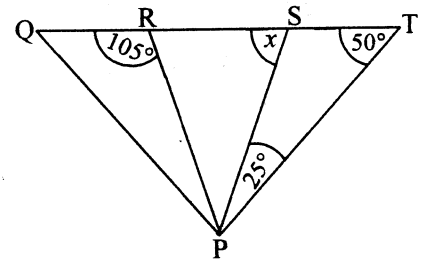


16. Write down the gradient and the intercept of the straight line $3y = 6x + 2$.

17. In the figure, if $\hat{QRP} = 105^\circ$, $\hat{SPT} = 25^\circ$, $\hat{STP} = 50^\circ$

(i) Find the value of x .

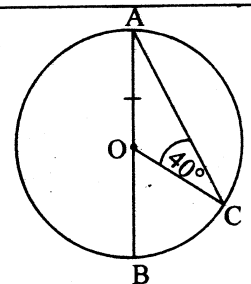
(ii) If $SP = 8 \text{ cm}$, find the value of RP .



18. Obtain the first approximation of $\sqrt{44}$.

19. Find the factors. $x^2 - 6x + 8$

20. In the circle with center O, if $\hat{ACO} = 40^\circ$ find the value of \hat{BOC} .



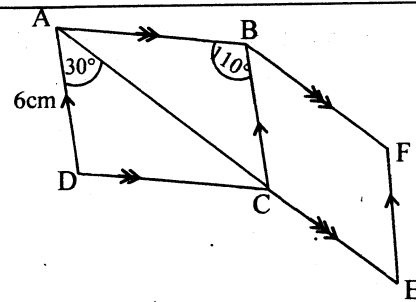
21. Food sufficient for 12 days for 20 cows has been stored in an animal farm. If 4 cows were taken away from the farm, for how many days will the food be sufficient?

22. Solve. $8 - 3x > 29$

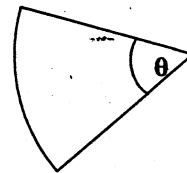
23. According to the information given in the figure,

(i) Find EF length.

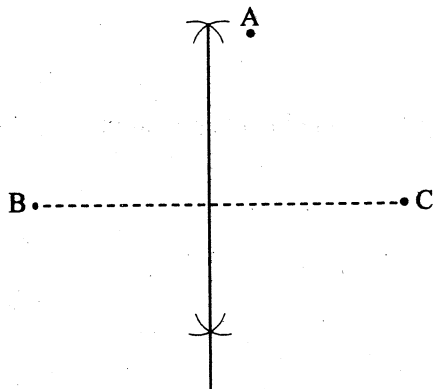
(ii) Find the value of \hat{ACD} .



24. The perimeter of the given sector is 39 cm and the arc length of it is 11 cm. Find the radius of the sector.



25. A, B and C are three flower shrubs. Another flower bush is needed to be plant equidistance to those three shrubs. An incomplete diagram which is drawn to locate the relevant place is shown in the figure. Complete the diagram and find the relevant place.



Part B

Answer all the questions on this paper itself.

01. $\frac{5}{8}$ of the money collected from students in a certain class for an educational trip were spent for the bus and $\frac{2}{3}$ of the remaining were spent for food.

(i) What fraction of the amount were remaining after spending for bus?

(ii) What fraction of the whole amount were spent for food?

(iii) After the above expenses, remaining amount were spent to buy tickets at the viewing points. What fraction of the whole amount were spent to buy tickets?

(iv) If Rs. 2 000 were spent to buy tickets and the number of students who went the trip were 40, what is the amount collected from one student?

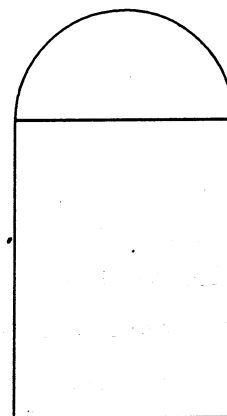
02. Length of a rectangular shaped land, which was chosen to perform a musical show, is twice of its breadth. Along one of its width side, a semi circular shaped stage is arranged as shown in the figure.

(i) If the breadth of the land is 28m, what is the radius of the semi circular stage?

(ii) How many times bigger is the length of the land than the radius of the stage?

(iii) Calculate the perimeter of the stage.

(iv) Find how large is the area of the rectangular shaped land compared to the area of the stage.



28 m

03. (a) A person who owns a retail shop, loaned Rs. 20 000 at an annual simple interest rate of 12% from a financial institution.

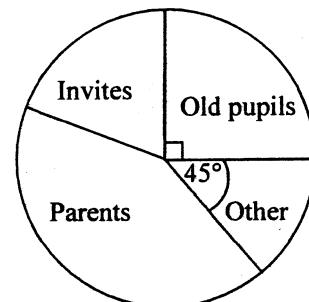
- (i) If Rs. 100 is loaned from the above financial institution, how much should be paid as annual interest?
- (ii) For the loaned amount, how much should he pay as the annual interest?
- (iii) What is the total amount that he should pay in order to settle the loan after three years?

(b) Shop owner pays Rs. 400 as rates per quarter and the relevant municipal council charges annual rates of 2%.

- (i) What is the annual rates that the shop owner pays?
- (ii) Calculate the annual assessed value of the shop.

04. An incomplete table of values and a pie chart which is drawn to illustrate the crowd who came to see a school sports meet is given below.

Crowd	Number
Invites
Parents	110
Old pupils	a
Other



- (i) If the total number of people who went to see the sports meet is 240, find the value of a .
- (ii) Calculate the angle at the center of the sector which represents parents.
- (iii) Fill in the blanks in the table
- (iv) Calculate the angle at the center of the sector which represents invites.
- (v) If 60% of the parents who came were mothers, find the number of fathers who participated.

05. (a) It is needed to select two girls for two dance items for a school concert. They should be selected from a group of three grade 10 girls and two grade 11 girls. It is possible to select one girl for both dance items. (Grade 10 girls are represented by T and the grade 11 girls are represented by E)

(i) Represent all the possible ways of selecting girls in the given grid.

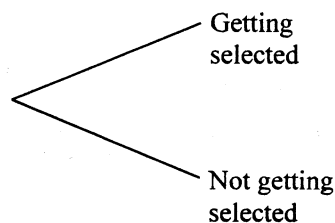
Second selection	E ₂					
	E ₁					
	T ₃					
	T ₂					
	T ₁					
		T ₁	T ₂	T ₃	E ₁	E ₂
First Selection						

(ii) Find the probability of selecting one girl for

(iii) Find the probability of selecting two girls from different grades for the dance items.

(b) Sandamini is a grade 10 student who is in the above group. Probability of Sandamini getting selected for the first dance item is $\frac{1}{5}$.

(i) Write the relevant probabilities in the given tree diagram which is drawn to represent Sandamini getting selected or not getting selected for the dance item.



(ii) Probability that Sandamini getting selected for the second dance item is also $\frac{1}{5}$, extend the tree diagram to represent Sandamini getting selected or not getting selected for the second dance item.

(iii) Find the probability that Sandamini getting selected for at least one dance item.



සියලු ම හිමිකම් ඇවිරිණි / முழுப் பதிப்புரிமையுடையது / All Rights Reserved

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ஆண்டிறுதி மதிப்பீடு - 2019
Third Term Evaluation

ශ්‍රේණිය
தரம் } 10
Grade

විෂය
பாடம் }
Subject

Mathematics

පත්‍රය
வினாத்தாள் } II
Paper

කාලය
காலம் } 03 hours
Time

- ◆ Answer 10 questions selecting 5 questions from part A and 5 questions from part B.
- ◆ Each question carries 10 marks.
- ◆ Volume of a cylinder with the radius r and the height h is $\pi r^2 h$.

Part A

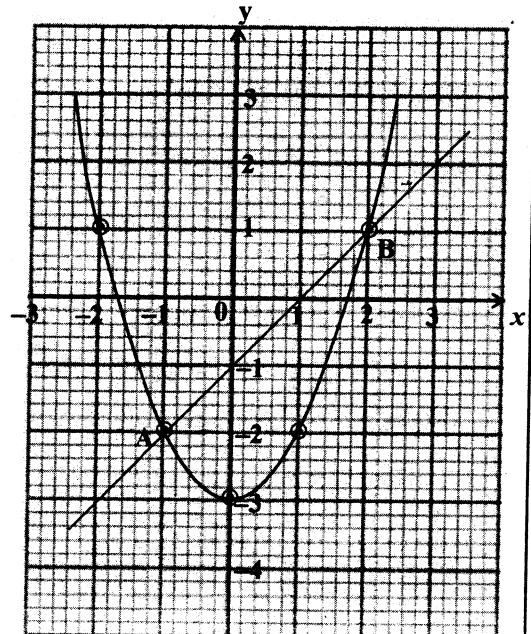
Answer five questions only.

01. It is estimated that 12 workers can complete a certain task in 5 days, by working 8 hours per day. In first 3 days, all the 12 workers were assigned for the task and all of them worked two hours overtime.

- (i) What is the magnitude of work in man hours?
- (ii) How many man hours were completed in first three days?
- (iii) What fraction of the whole work is done in first three days?
- (iv) After three days, 7 workers were assigned for another task. If it is decided to complete the remaining work with remaining workers on expected date, how many hours should a man work per day?

02. Using the graphs shown in the figure, answer the following questions.

- (i) What is the minimum value of the quadratic equation?
- (ii) Write the coordinates of the turning point of the function.
- (iii) Write the equation of the quadratic function in the form $y = ax^2 + b$
- (iv) Write the interval of the values of x , where the function increase negatively.
- (v) Write the equation of the straight line which passes through the points A and B.



03. (a) Number of children who came to see a film in a certain day is twice the number of adults who came to see the film. The total income gained by selling the tickets on that day was Rs. 14 000. If the price of a child ticket is Rs. 100 and the price of an adult ticket is Rs. 150,

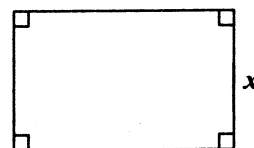
(i) By taking the number of children who came to see the film as x and the number of adults who came to see the film as y , build up a pair of simultaneous equations.

(ii) Solve the two equations and find the value of x and y .

(b) Make 'u' the subject of the formula $v = \sqrt{u^2 + 2as}$

04. (a) Solve. $\frac{2}{x+2} + \frac{1}{2(x+2)} = 1$

(b) (i) Length of the rectangular flower bed shown in the figure is ~~5m~~^{4m} longer than its breadth. If the area of the flower bed is 45 m^2 , by taking the breadth of it as x and build up a quadratic equation.



(ii) Solve the equation and find the breadth of the flower bed.

05. A person who is at the top of a 50 m tall building, observes a foot of a lamp post at an angle of depression of 40° and the top of the lamp post at an angle of depression of 30° . Using the given information draw a scale diagram and find the height of the lamp post.

06. Following table elicits the profit gained by a certain lottery ticket seller, from selling the lottery tickets within last 30 days.

Profit (Rs.)	350 - 400	400 - 450	450 - 500	500 - 550	550 - 600	600 - 650	650 - 700
No of days	2	3	5	9	4	4	3

- (i) What is the modal class of this distribution?
- (ii) By taking the mid value of the modal class as assumed mean, calculate the mean profit gained by the seller during a day.
- (iii) If it is need to spend Rs. 10 000 for a renovation of the selling center, show that the profit gained by selling the tickets in 20 days will be sufficient for that.

Part B

Answer five questions only.

07. First four terms of an arithmetic progression is given below.

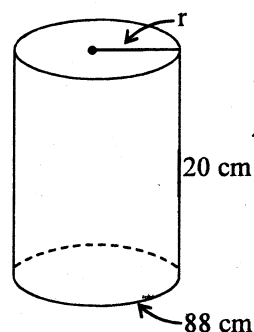
5, 9, 13, 17, ...

- (i) Find the 12th term of the progression.
- (ii) Find the sum of the first 12 terms of the progression.
- (iii) Without using the formulae, find the first 13 terms of the progression.
- (iv) Which term of it is 61?

08. Using only the straight edge with the scale cm/mm and the pair of compasses, do the following constructions.

- (i) Construct the triangle ABC where $AB = 7.5$ cm, $\hat{BAC} = 60^\circ$ and $\hat{ABC} = 45^\circ$.
- (ii) Construct a perpendicular to AB, from C.
- (iii) Construct the locus of points moving equidistance to A and C.
- (iv) Mark the intersection point of the locus and the perpendicular drawn from C as O. Construct the circle with the center O and the radius OA.
- (v) Measure and write the radius of the circle.

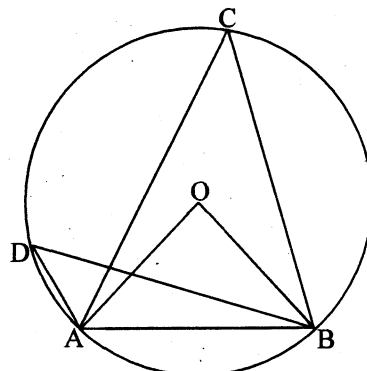
09. (a) In the given cylindrical container, ~~radius~~ ^{circumference} is 88 cm and the height is 20 cm. Calculate its volume.



(b) Find the value using logarithmic tables.

$$\frac{78.5 \times 9.321}{342.6}$$

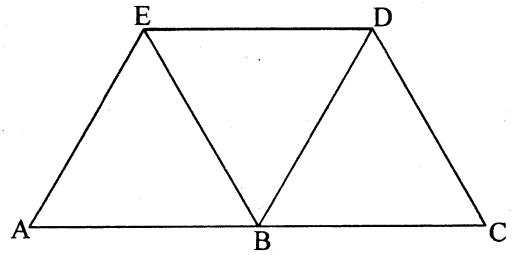
10. In the figure, center of the circle is O. Points A, B, C and D are on the circle. If $\hat{ADB} = \hat{OAB}$, Show that $\hat{ACB} = 45^\circ$



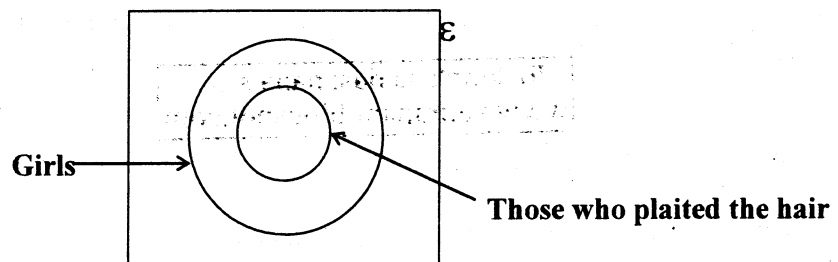
11. In the given figure, mid point of AC is B. If

$$\angle AEB = \angle EBD \text{ and } AE = BD,$$

- (i) Show that $\triangle ABE \cong \triangle BDE$
- (ii) Show that $AB \parallel ED$.
- (iii) Prove that BCDE is a parallelogram.



12. A Venn diagram drawn to include the information about 50 students who were participated for a certain drill display is given below.



- Number of boys who were participated for the drill display was 20.
 - 18 girls who were participated, plait their hair.
- (i) Copy the given Venn diagram in your answer sheet and enter the above information.
 - (ii) Find the number of girls who do not plait their hair. Shade the relevant region in the Venn diagram.
 - (iii) If the girls represent by A and those who plaited the hair represented by B, write down the shaded region using set notation in terms of A and B.
 - (iv) From the students who were participated for the drill display, 25 wore in red t-shirts. Number of girls who wore red t-shirts were 12. Draw another Venn diagram and include this information.