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மேல் மாகாணக் கல்வித் திணைக்களம்
Department of Education - Western Province

වර්ෂ අවසාන ඇගයීම
ஆண்டிறுதி மதிப்பீடு - 2019
Year End Evaluation

ශ්‍රේණිය தரம் Grade	විෂයය பாடம் Subject	පත්‍රය வினாத்தாள் Paper	කාලය காலம் Time
09	Mathematics	I ,II	02 Hours

Name: ..... Index No : .....

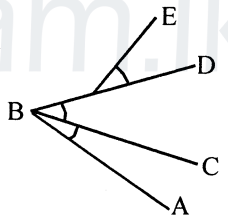
Part I

- **Answer all the questions on this paper itself.**
- **Each question carries 02 marks.**

(1) Find the 8th term of a number pattern where the general term is $T_n = 2n - 5$.

(2) Convert the binary number 1010_{two} in to base ten.

(3) Name a pair of adjcent angles shown in the figure.



(4) Using the knowledge of factors, find the value.

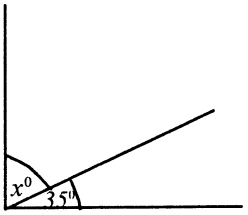
$102.5^2 - 2.5^2$

(5) If a vender has to incur a loss of 25% when selling a wrist watch for Rs 900, find the buying price of it.

(6) Solve. $\frac{y - 5}{2} = 3$

(7) Simplify $\frac{6}{7}$ of $\frac{2}{3}$

(8) If the figure shows a pair of complementary angles, find the value of x.

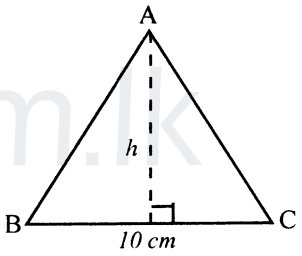


(9) Express 1.5 cubic meters in liters.

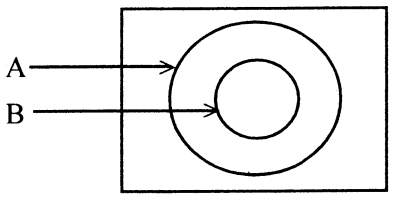
(10) Round off to the nearest first decimal place. 200.85

(11) What is the size of the class intervals (10 - 19) and (20 - 29)?

(12) Area of the ABC triangle is 25 cm^2.
Find the value of the perpendicular height 'h' of it.



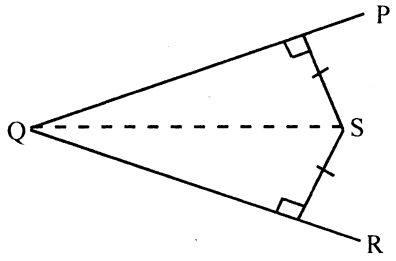
(13) Shade the region $A \cap B$ in the given Venn diagram.



(14) Make 'b' the subject of the formula $a = \frac{bx}{c-d}$

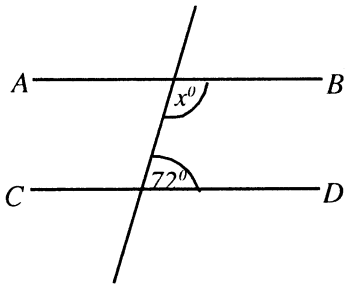
(15) Write the equation of the straight line where the gradient is $\frac{2}{3}$ and the intercept is -1.

(16) If the perpendicular distance from S to PQ and QR are equal, write the relationship between $P\hat{Q}S$ and $R\hat{Q}S$.

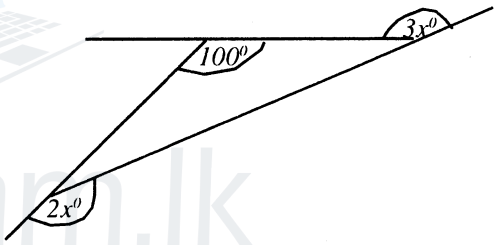


(17) Area of the base of a cuboid shaped container is 25cm^2. If the capacity of it is 200 *ml*, find the height of it.

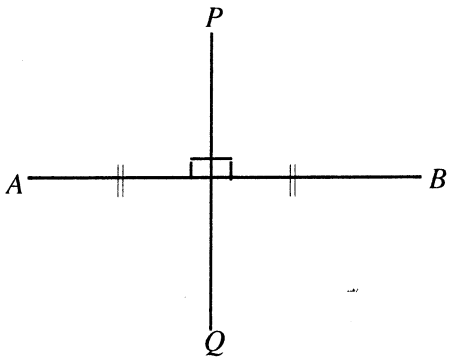
(18) What should be the value of the angle x, in order to make the two straight lines AB and CD parallel?



(19) According to the information given in the figure, find the value of x.



(20) Locus of a moving point equidistant to the two points A and B is shown by PQ. What is the geometrical name of it?



Part II

- **Answer the first question and another 04 questions only.**
- **First question carries 16 marks and other questions carry 11 marks each.**

(1) (*a*) Answer the following questions given regarding the activity, "finding the area of a circle" that you have done in the lesson," Area of the plane figures"

(i) Draw the initial plane figure that you have used for the activity.

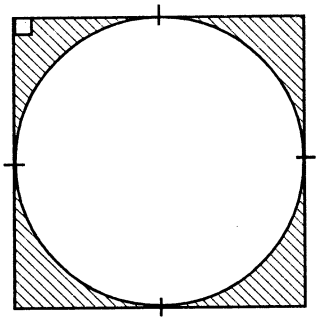
(ii) Name the plane figure that you made by cutting the initial plane figure into sectors.

(iii) What is the conclution that you have arrieved regarding the areas of two plane figures?

(iv) Write down the formula that you have obtained for the area of a circle, in terms of π and r.

(v) Using the formula, find the area of a circle with radius 7 cm. (Take $\pi = \frac{22}{7}$)

(vi) A circle is situated inside a square with the area 196cm^2, as shown in the figure.



(*a*) What is the radius of the circle?

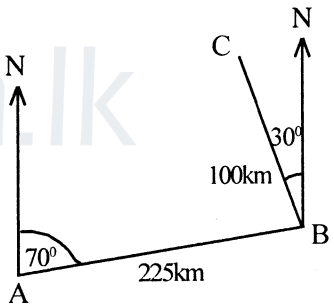
(*b*) Find the area of the shaded region in the figure.

(b) According to the given sketch, find the following.

(i) Bearing of B from A.

(ii) Bearing of C from B.

(iii) If 50km of the actual length is represented by 1cm in the scale diagram, write down the length of AB and BC in the scale diagram.



(2) An incomplete table of values prepared to draw the graph of the function $y = -3x + 1$ is given below.

x	-2	-1	0	1	2
y	.....	4	1	.....	-5

(i) Fill in the blanks in the table.

(ii) Draw the graph of the function in the a suitable cartesian plane.

(iii) Draw the straight line $y = 4$ on the same cartesian plane.

(iv) Write the coordinates of the point where the function and $y = 4$ line intersect.

(v) Draw a straight line parallel to $y = -3x + 1$ and the intercept - 2 on the same cartesian plane.

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(3) (a) (i) Express $\frac{25}{8}$ as a mixed number.

(ii) Simplify $\frac{2}{3} \times \left(\frac{4}{5} + \frac{1}{2}\right)$ and express the answer in its simplest from.

(b) A father gave $\frac{1}{4}$ of his land to his son and he sold $\frac{1}{2}$ of the remaining for Rs. 300 000.

(i) What fraction of the land is remaining after giving to son?

(ii) What fraction of the whole land is sold?

(iii) Find the value of the whole land.

(4) Using only the straight edge and the pair of compasses do the following constructions in a single diagram. Show the construction lines clearly.

(i) Draw the AB straight line where AB = 7cm.

(ii) Construct $B\hat{A}C$ such that $B\hat{A}C = 60^0$.

(iii) Locate the point C where AC = 5 cm and complete the triangle ABC. Measure and write BC length.

(vi) Construct the angle bisector of $B\hat{A}C$.

(v) Construct the locus of a moving point equidistant to the points A and B.

(vi) Name the intersection point of above (iv) and (v) loci as *X*.

(5) (a) (i) Simplify and express the answer in its simplest from.

$$\frac{2y}{5} + \frac{y}{10}$$

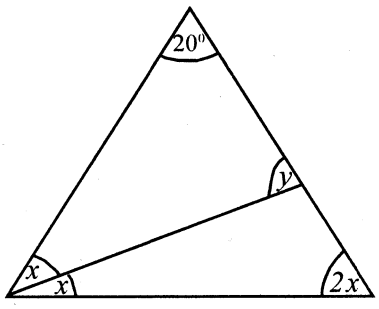
(ii) Expand and simplify. $(a + 3)(a - 1)$

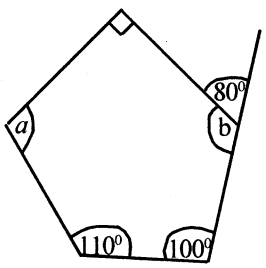
(b) A student bought 3 pencils and 2 pens for Rs. 66. from the school book shop. Shop owner said that the different between 3 pencils and 2 pens is Rs. 6.

(i) By taking the price of a pencil as Rs. x and the price of a pen as Rs. y, build up a pair of simultaneous equations.

(ii) By solving the two equations find the price of a prncil and pen seperately.

(6) (a) According to the information given in the diagrams, find the magnitudes of angles marked in English letters.





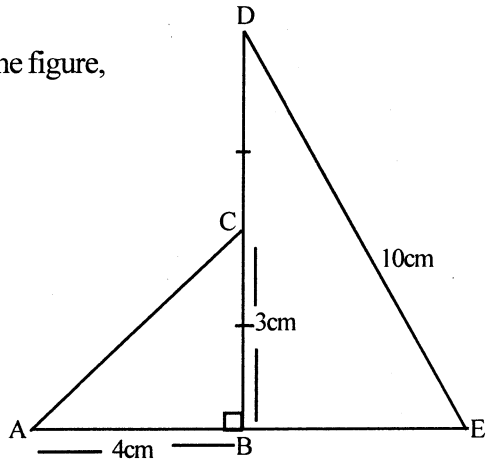
(i) Find x and y

(ii) Find a and b

(b) According to the information given in the figure,

(i) Calculate AC length

(ii) Calculate BE length

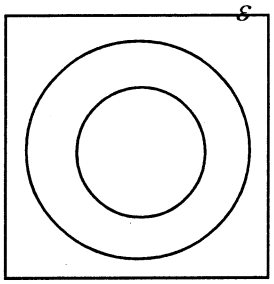


(7) (*a*) Copy the given Venn diagram in your answer sheet and include the given data in it.

$\varepsilon = \{ 1, 2, 3, 4, 5, 6, 7, 8, 9 \}$

$A = \{ 4, 6, 8, 9 \}$

$B = \{ 4, 8 \}$



(*b*) In a bag there are 4 red balls, 3 blue balls and 5 green balls with same size and shape. A ball is taken randomly from the bag.

(i) Find the probability of getting a blue ball.

(ii) Find the probability of not getting a red ball.

(*c*) Marks obtained by 188 students in the grade 9 section of a certain school is given below.

Marks (class interval)	Number of students (frequency)
0 - 8	15
9 - 17	18
18 - 26	20
27 - 35	40
36 - 44	41
45 - 53	30
54 - 62	24
	188

(i) Find the range of the distribution.

(ii) Find the modal class of the distribution.

(iii) Find the median class of the distribution.