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මத்திய மாகாண கல்வித் திணைக்களம்
Department of Education - Central Province

Grade 09 | **Year - End Examination - 2019** | **32 E I**

Mathematics - I | **Time : One Hour**

Name / Index no.

.....
Invigilator's Signature

Important

- The question paper contains 6 pages.
- Write your Name / Index number correctly.
- Answer all the questions in part I
- Use the space provided under each question to write the answer and the working.
- Answer only 5 questions in part II
- Its compulsory to write the correct units and the relevant steps.
- Marks are awarded as follows.

Part I - A
2 marks for each correct answer for the questions from 1-15

Part I- B
10 marks for the each question with correct answer.

Part II
10 marks for the each question with correct answer.

For the use of examiners only

Question number		Marks
Part I	1-15	
Part II	1	
	2	
	3	
	4	
	5	
	6	
	7	
Total		

..... Marked by	..... Code number
..... Checked by	..... Code number

Part A

Answer all the questions in the spaces provided.

01. Find the price of 7 m of cloth, if 4 m of the cloth costs Rs. 420.

02. Solve :

$$\frac{x+5}{3} = 4$$

03. The base area of a tank in the shape of a cuboid is $2\ m^2$ and its capacity is 2000 *l*.

i. Find its capacity in cubic meters.

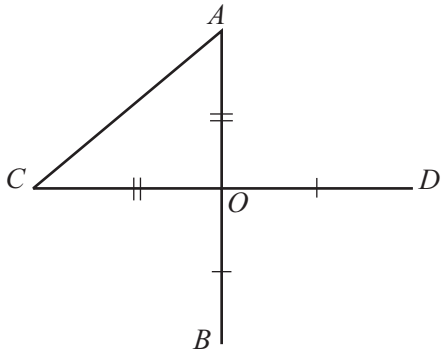
ii. Find is the height of the tank.

04. Simplify : $\frac{x+1}{(2x+3)} + \frac{2x}{(2x+3)}$

05. Convert 101_{two} into number base 10.

06. Fill in the blanks of the following proof.

$AO = OC$
$OB = OD$
$AO + OB = OC + ...$
$\therefore AB = ...$

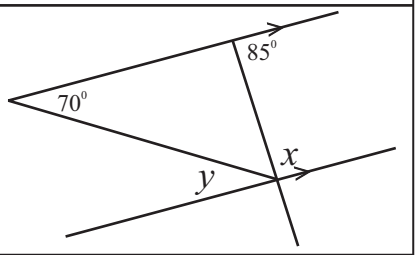


07. Simplify $2^3 \div 2^6$ and express the answer with a positive index.

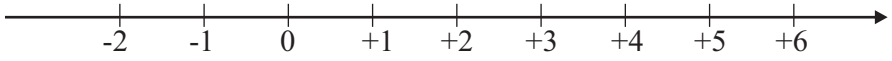
08. The diameter of a certain micro organism is 0.000653 cm. Write this in scientific notation .

09. Find the value of $x+2y$, when $x=3$ and $y=\frac{1}{4}$.

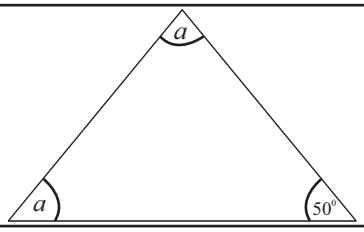
10. Find the values of x and y according to the data given in the diagram.



11. Solve the inequality $x - 3 \geq 1$ and represent the solutions on the number line given below.



12. Find the value of a in the figure .

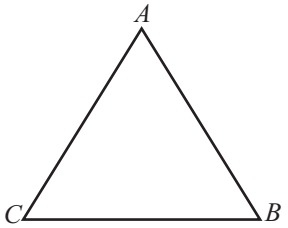


13. The magnitude of one interior angle of a regular polygon is x. The magnitude of one exterior angle is y.
    i. Write the relation between x and y.

    ii. Express the number of sides of the polygon in terms of y.

14. Make t the subject of the formula $F=7r+t$.

15. Draw the sketch of the bisector of the angle $A\hat{B}C$ in the figure.



Part B

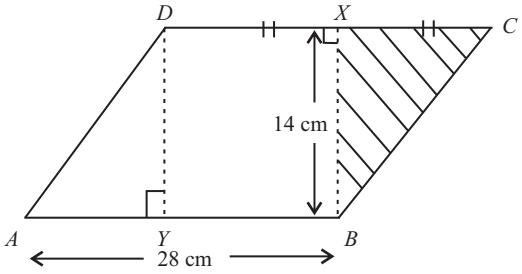
(01) a) Simplify : $1\frac{1}{4} \div \left(\frac{1}{3} \text{ of } \frac{3}{4}\right)$

b) i. Marvan gave $\frac{1}{3}$ of the amount of money he had to Mohan and $\frac{2}{5}$ of it to Radha. Write the amount of money given to both of them as a fraction of the total amount he had.

ii. If the total amount of money given to Mohan and Radha is Rs 3300, find the total amount Marvan had at the beginning.

(02) The diagram shows a lamina in the shape of a parallelogram used to make an emblem. $DX = XC$.

i. Find the area of the parallelogram $ABCD$.



ii. The shaded part, is cut and separated from the lamina.

a) What is the shape of the remaing part?

b) Find the area of the remaining part.

iii. What is the radius of the largest circle that can be drawn inside $BXDY$?

iv. Find the area of the above circle.

Grade 09 | **Year End Examination - 2019** | **32 E II**

Mathematics II | **Time : One and half Hours.**

- **Answer five questions only.**

01) i. $x+y=25$
$2x-y=5$
Find the values of x and y by solving the pair of simultaneous equations.

ii. Find the factors of $x^2-8x+12$.

iii. Mala spent Rs 300 to buy 5 books and two pens worth Rs 30 each. Build up a simple equation by taking x as the price of a book and find the price of a book by solving it.

(02) The incomplete table given below is prepared to draw the graph of the function $y=2x-3$.

x	-2	-1	0	+1	+2
y	-7	-5	....	-1	....

i. Find the values of y when $x=0$ and $x=+2$.

ii. Draw the graph of the function on the cartesian plane.

iii. Write the equation of the graph drawn parallel to the above graph and passes through the point (0,1).

iv. Draw the graph $y=x$ on the same co-ordinates plane.

v. Write the co-ordinates of the point of intersection of the graphs $y=x$ and $y=2x-3$.

(03) a) ε = { whole numbers from 1 to 10}
A = { Prime numbers from 1 to 10 }
B = { Even numbers from 1 to 10 }

i. Write the above sets in terms of its elements.

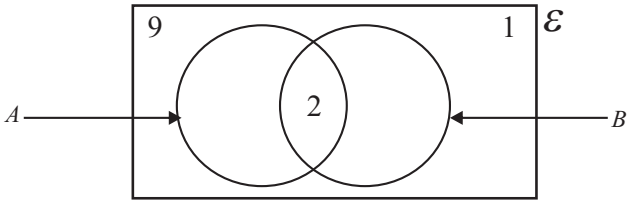
ii. Denote the above sets in a copy of the Venn diagram given below.

iii. Copy down the following and fill in the blanks according to the Venn diagram.

a) $A \cap B$ = { .....}

b) A' = { .....}

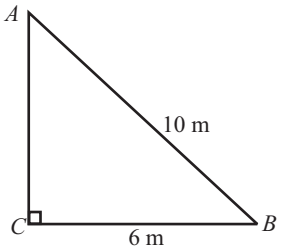
c) n $(A \cup B)$ = ...



b) An unbiased coin is flipped once.
i. Write the sample space.

ii. Find the probability of obtaining tail.

(04) a) The diagram shows how the top of the vertical power post AC is tied down to the ground at the point B. Find the height of AC according to the measurements given in the diagram.



b) A child walks 60 m towards south from his home. Then he walks 100 m on a bearing 055° and then comes near a mango tree.

i. Represent the above information in a sketch.

ii. Draw a scale diagram by taking the scale 1 cm represents 10 m.

iii. Using the scale diagram, find the actual direct distance from his home to the mango tree.

(05) The table given below shows the information regarding the pairs of shoes sold during a month in a certain shop.

Number of pairs of shoes sold	20	21	22	23	24	25
Number of days	2	3	6	10	5	4

i. Find is the range of the distribution.

ii. What is the number of pairs of shoes sold in most number of days?

iii. Find the mean number of shoes sold in a day to the nearest whole number.

iv. The shop owner says that his target is to sell 700 pairs of shoes within a period of a month. Giving reasons, state whether his target is achieved or not.

(06) Construct the following using a straight edge with cm/mm scale and a pair of compasses only.

i. Draw the line segment AB of length 6.2 cm.

ii. Construct a perpendicular to AB at A.

iii. Construct the angle $A\hat{B}C = 30^{\circ}$ such that the point C lies on the perpendicular drawn above.

iv. Construct the perpendicular bisector of CB.

v. Measure and write the value of $A\hat{C}B$.

(07) Malik saved Rs. 12 in his till in the first day and thereafter every day, he saved Rs 5 more than the previous day.

i. Write separately the amounts of money he saved in the till on the first three days.

ii. Find the general term of the above number pattern.

iii. Using the general term, find the amount saved on the 30^{th} day.

iv. Malik takes Rs 5 000 from his till and deposits it in a bank at12% annual simple interest. Find the interest received at the end of the year.

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