Minuwangoda Education Zone

Second Term Evaluation - 2023

Grade -10

Mathematics I

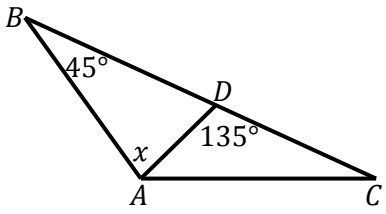
Name: …… Time: 2 hours

Part A

Answer all the questions on this paper itself.

01) Choose the correct answer and fill in the blanks.
The most suitable value for $\sqrt{10}$ to the 1st approximation is …….. (3.1/ 3.2/ 3.3/ 32)

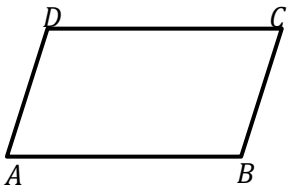
02) Find the value of x.



03) Simplify $\frac{4}{x} = 2$

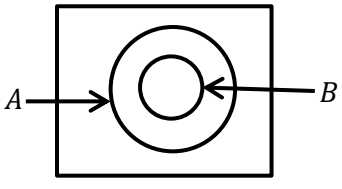
04) Find the L.C.M. of following algebraic expressions $2ab^2, a^2b, 4a$

05) ABCD is a parallogram. Write two characteristics of it.

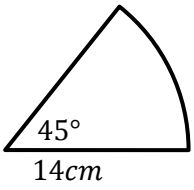


06) Find the factors. $4x^2 + 5x - 6$

07) Shade the region belongs to $(A \cap B')$



08) Find the area of the given sector.



09) "Logarithm of 32 to the base 2 is 5" Express in logarithmic notation.

10) Write the gradient of the straight line passing through the point (2, 3) and intercept is 2.

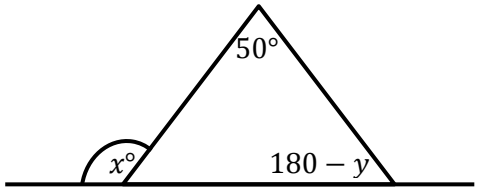
11) 5 men can complete a certain work in 6 days. How many days will it take to complete the same task with 2 men

12) Sarath gave Rs.10 000 loan for 2 years with 12% annual simple interest rate. Find the interest after 2 years

13) Make the subject as t in the formulae $x = \sqrt{u + t}$

14) A bird flying at uniform speed travels 1600km in 4 hours. Calculate the speed of the bird.

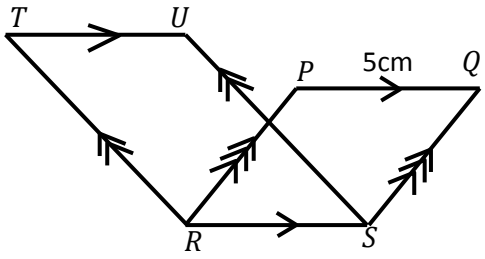
15) Find the value $(x + y)$.



16) Find the value using knowledge of factors $89^2 - 88^2$

17) Simplify $\frac{4}{3x} - \frac{1}{x}$.

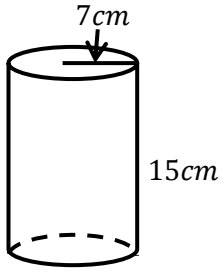
18) Find the length of TU according to the given diagram.



19) Find the income tax payable by a person who is earning an annual income of Rs.800 000, according to the table below.

Annual income	Tax percentage
First Rs.500 000	Free
Next Rs.500 000	4%
Next Rs.500 000	8%

20) Find the area of the curved surface shown in the given figure.

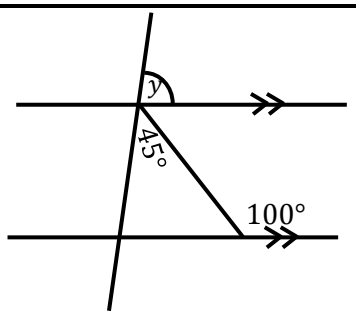


21) The time taken to completely fill a water tank of capacity $8m^3$ is 2 hours and 40 minutes. What is the rate of flowing water, from the water supply in liters per minute?

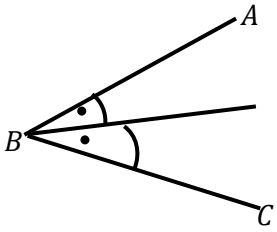
22) ABCD is a rectangle with AB=15cm, BC=8cm. Find the length of AC.

23) Simplify $(x-2)(x-3)=0$

24) Find the value of y according to the data given in the diagram.



25) Here is an incomplete sketch drawn by a student to find the position of a point P which is equidistance to points B and C and equidistant to AB and BC straight line segments. Draw the rough sketch of the construction lines required to mark the location of point P and mark it.



Part B

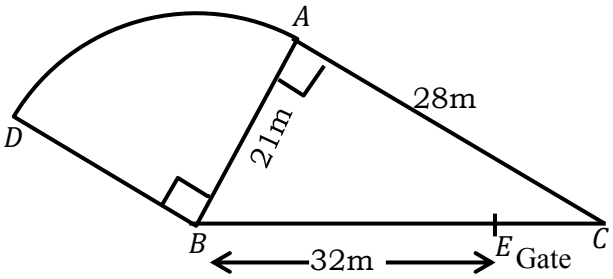
01) Ravindu intended to distribute 2/5 of this money to his wife and the rest equally to his three sons. But before distrubuting like that 1/6 of the money had to be given to the brother. The remaining amount distributed as initially intended.

i. What fraction of money recived by wife, Ravindu initially had?

ii. Write the remaining amount of money after giving to brother and wife as a fraction of initial amount

iii. If a son recived Rs.40000 less than, what he would have received initially intended, find the amount of money that Ravindu initialy had.

02) Figure shows a sketch of a model farm being set up for an exibition. It consists of a right angled triangular plot ABC and a sector ABD.



i. Find the arc length AD.

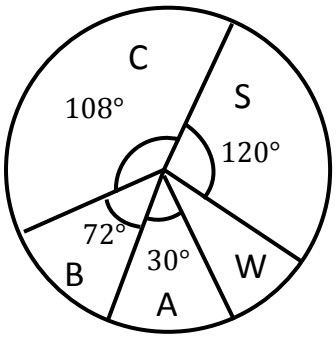
ii. Find the cost needed to make a fence around the farm excluding the gate at Rs.50 per metre.

iii. Find the area of plot ABD.

iv. If the organizers wish to allocate more land for vegetable cultivation out of the two plots, which plot should be planted vegetables?

v. It is required to construct a rectangular shape office with an area $35m^2$ in this piece of Land as the boundries of AB and AC. Length and breadth of that office should be whole numbers. Draw a sketch of the office that satisfies above requirements in the given figure with measurements.

03) The given pie chart shows the passes obtained by grade 10 students of Gemunu Vidyalaya for mathematics paper based on the marks obtained in the 3rd term end examination. The number of students who got A pass in thus class is 5.



i. Find the angle at the centre representing the students who got W pass.

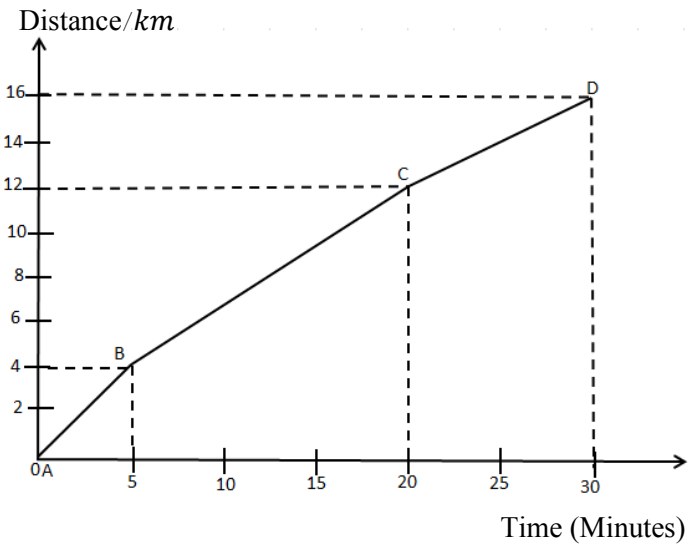
ii. Which pass most number of students obtained.

iii. How many students obtained S pass.

iv. Find the total number of students who answered this paper.

v. Express the number of students who obtained at least a S pass in Mathematics as a fraction of the total number of students.

04) Rasika is traveling to the city from his house. Distance time graph given here shows his motion.



i. What is the distance from his house to the city.

ii. Calculate the average speed he traveled.

iii. Mark the part of the distance traved at the speed 32 kmh^{-1} using English letters.

iv. The speed of B to C is how many times of speed A to B

05)

(a) When an Electric item is imported 30% of its value has to be paid as customs duty. If Rupees 9000 has to pay as customs duty when import this type of electric item, Find the value of the imported item.

(b)

i. The assessed value of a house is Rupees 30 000. If the relevant municipal council charges 8% of the value of the house as rates, calculate the rates that have to be paid for a quarter.

ii. A few years later the assessed value of the house changed and the rates increased up to 9%. If the rates payable per quarter increased by Rupees 30, find the new annual assessed value of the house.