

පළමු වාර පරීක්ෂණය - 10 ශ්‍රේණිය - 2020
First Term Test - Grade 10 - 2020

Name/Index No:- Mathematics - I **Time:- 2 hours**

- Answer all the questions on this paper it self.
- Each question in part A carries 2 marks and each question in part B carries 10 marks.

Part A

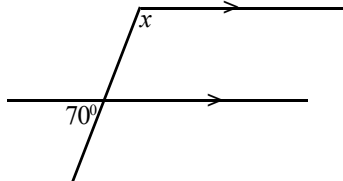
(1) If $3.4 \times 3.4 = 11.56$ and $3.5 \times 3.5 = 12.25$ find the value of $\sqrt{12}$ to the first approximation.

(2) Expand and simplify.
 $(x - 5)(x + 2)$

(3) Write the set p' with elements.



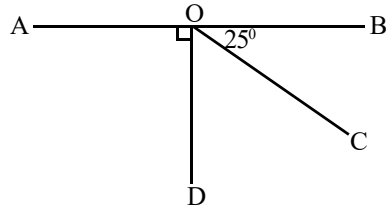
(4) Find the value of x .



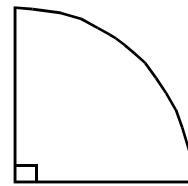
(5) The number of coconuts plucked from 10 coconuts trees of Mr. Perera's home garden is given below.
 5, 7, 8, 10, 10, 13, 13, x , 14, 17
 If the mode of this distribution is 13, find the value of x .

(6) A water bottle which was bought for Rs. 400 is sold for Rs. 500. Find the profit percentage.

(7) AOB is a straight line. Find the value of $\hat{C}OD$.



(8) The arc length of a given sector is 44 cm. Find the radius of it.

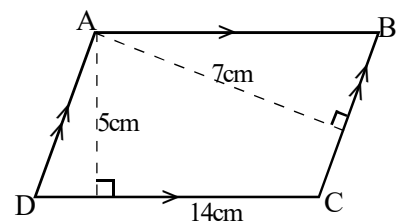


(9) Simplify and keep the answer with positive indices. $x^3 \div x^5$

(10) Factorize.

$$x^2 - 5x - 6$$

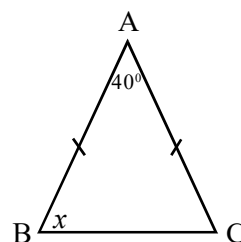
(11) In the parallelogram ABCD, find the length of the side BC.



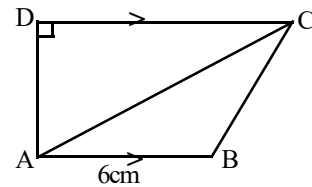
(12) Find the L. C. M. of following algebraic terms.

$$3x^2, xy, 2y^2$$

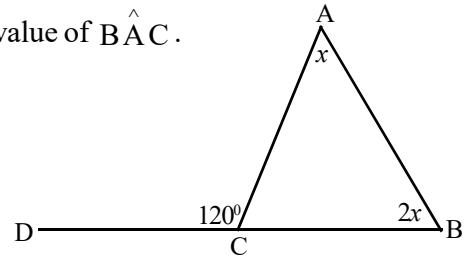
(13) Find the value of x .



(14) The area of the triangle ABC is 15cm^2 . Find the length of AD.



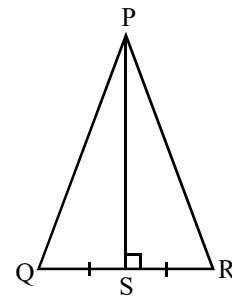
(15) In the triangle ABC, the side BC is produced to D. Find the value of \hat{BAC} .



(16) Simplify.

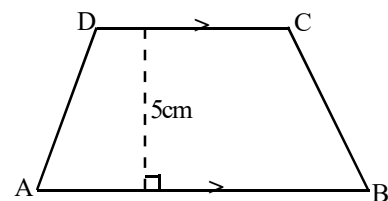
$$\frac{5}{7} - \frac{x+2}{7}$$

(17) In the triangle PQR, if $QR \perp PS$ and $QS = SR$. Write the case of congruency of the $\triangle PQS$ and $\triangle PRS$.



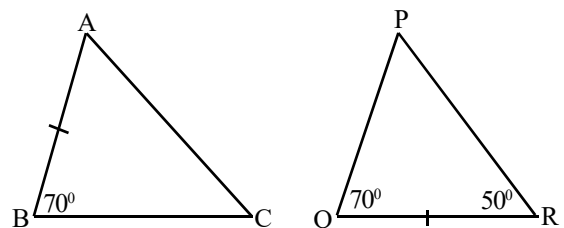
(18) 8 men need 6 days to complete a certain task. Find the number of days needed for 12 men to complete the same task.

(19) If $AB + CD = 40\text{ cm}$,
find the area of the trapezium ABCD.



(20) ABC and PQR are two congruent triangles.

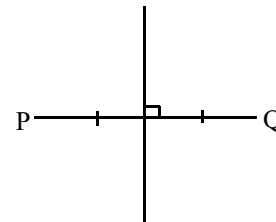
Find the value of \hat{ACB}



(21) Solve.

$$7 - 2(x - 2) = 1$$

(22) P and Q are two trees with the gap of 20m and a narrow road which is located at equi distance to P and Q is given in the diagram. Using the knowledge about loci, sketch the location of a motorbick such that the distance between the motorbick and P is 20m.



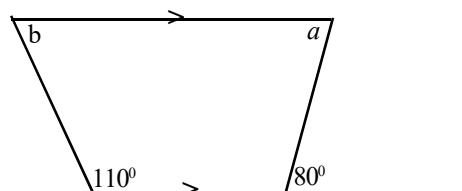
(23) The information about 100 peoples who live in 'Kosgama' Village is given in the following table. When a person is selected randomly from them, find the probability of that person is being a boy.

	Elders	children
Gents	35	13
Ladies	40	12

(24) According to the data given in the figure.

(i) Find the value of a .

(ii) Find the value of b .



(25) In the function $y - 2x = 3$

(i) Find the gradient.

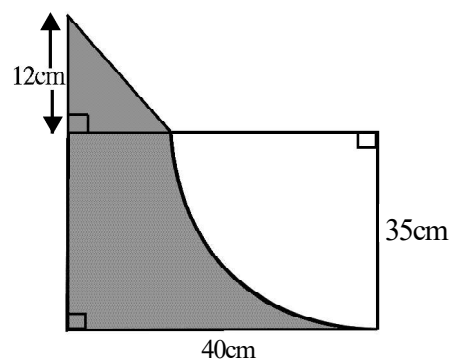
(ii) Find the intercept.

Part B

- (1) Nilma who come to the school with a completely filled water bottle, drank $\frac{1}{6}$ of it before the interval and drank $\frac{3}{5}$ of the remainder in the interval.
- (i) Write the amount of water drank in the interval as a fraction of total amount of water.
- (ii) Write the remaining water amount as a fraction of total amount of water.
- (iii) If the remaining water amount is $600ml$, find the capacity of the water bottle.
- (iv) Find the amount of water drank by Nilma before the interval in ml .

- (2) Given below is a logo that fixed on the entrance of a certain business place. The shaded part is created using a metal sheet and painted in blue colour and the radius of the sector is made by using stainless steel pipes.

- (i) Find the arc length of the sector.
- (ii) Find the length of the diagonal of the right angled triangle.

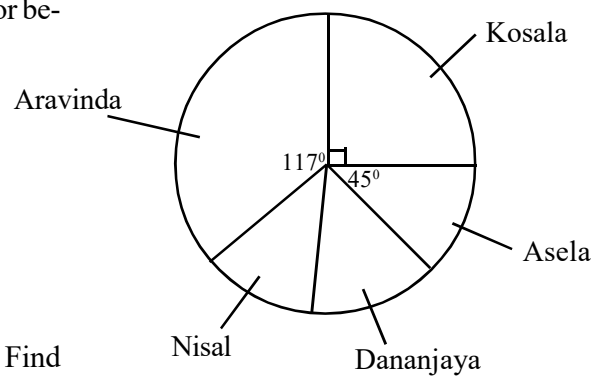


(iii) Find the perimeter of the metal sheet painted in blue colour.

(iv) Find the area of the shaded part.

(3) To select a student for the students parliament of 2019, five students of grade 9A are participated for an election. The following pie chart represents about the number of votes obtained by them from the own class.

(i) If the number of votes obtained by Nisal and Dananjaya are equal, find the angle of the sector belongs to Nisal.



(ii) If the number of votes obtained by Asela is 5. Find the total number of students in the class.

(iii) Find the number of votes obtained by the student who selected for the students parliaments.

(iv) In 2020, Asela resigned the school and 6 new students were admitted to this class. The remaining 4 students who contested in 2019 came forward in 2020 and Aravinda, Nisal and Dananjaya obtained same number of votes in 2019. Find the angle of the sector relevant for the number of votes obtained by Kosala in the pie chart drawn to represent the number of votes obtained by all four candidates in 2020.

(4) In a certain student's hostel the capacity of the water tank is 10 000 *l*. This water volume is sufficient for 50 students for 8 days. After 3 days, 10 students left the hostel.

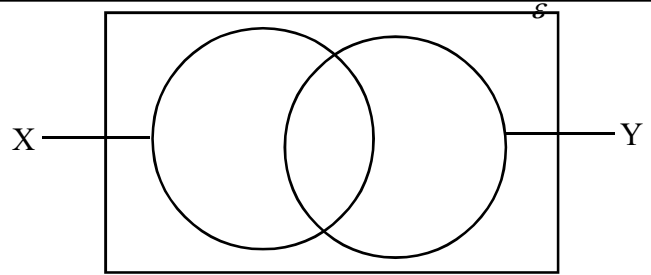
(i) Find the number of days that 10 000 *l* of water volume is sufficient for a student.

(ii) Find the water volume needed for a student per day.

(iii) After first 3 days, find the remaining water volume in the tank.

(iv) After how many days will remain 250 *ml* of water in the tank.

- (5) (a) $\mathcal{E} = \{ a, b, c, d, e, f, g, h \}$
 $X = \{ a, b, d, e, f \}$
 $Y = \{ c, d, e \}$



- (i) Insert the above data in to the given venn diagram.
- (ii) Shade the region $X' \cap Y$ in the venn diagram.
- (iii) If $P = \{ g, h \}$ write the set P using X and Y.
- (iv) Write two sub sets of the set with the elements which do not belong to Y but belong to X.



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First Term Test - Grade 10 - 2020

Name/Index No:- Mathematics - II Time:- 3 hours

- Answer ten questions selecting five questions from part A and five questions from part B.
- Write relevant steps and correct units in answering the questions.
- Each question carries 10 marks.

Part A

(1)

"Sugathapala" Furniture store

10% discount is given for every item buy over Rs. 100000

8% discount is given for every item buy under Rs. 100000

Mr. Sugathapala borrowed a loan of Rs. 150 000 to pay Rs. 3000 as the interest for each month. He bought two sofa sets with the price of Rs. 60 000 and Rs. 90 000 respectively by investing the total amount of the loan. He marked the price of the sofa set which was bought for Rs. 90000 as Rs. 120 000 and the sofa set which was bought for Rs. 60000 as Rs. 80000. Within the first three months he sold this two sofa sets and paid the loan and the interest for three months. Show that the profit gained by this sales is greater than Rs. 22 000.

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

x	-2	-1	0	1	2	3
y	4	2	1	0

- (i) Copy the table on your answer sheet and fill in the blanks.
- (ii) Draw the graph of the function $y = -x + 2$ using a suitable cartesian plane.
- (iii) Write the 'y' value of the point which intersects the y axis and the above graph.
- (iv) Plot 3 correct points relevant to the graph of the function of $y = x$ on the same cartesian plane and write the co-ordinates of the intersection point of the graphs $y = x$ and $y = -x + 2$.

- (3) In a square shaped land with the length of a side of $(x + 5)$, grass has grown in rectangular shaped part with the length of $(x + 1)$ and breadth of $(x - 3)$.
- (i) Write an algebraic expression for the area of the land which didn't grow grass.
 - (ii) If the area of the land which didn't grow grass is 88cm^2 , find the area of the whole land.

- (4) (a) Solve.

$$5x - 2y = 5$$

$$3x - 2y = -1$$

- (ii) Factorize.

(i) $2x^2 - x - 6$

(ii) $80 - 5x^2$

- (5) The following table is shown about the number of chinese peoples infected with the Corona virus after 50 days of testing.

Number of peoples	4	5	6	7	8	9
Number of days	3	8	15	11	8	5

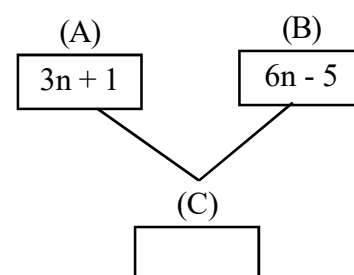
- (i) Find the maximum number of infected peoples found in a day.
(ii) Find the number of infected peoples found in most number of days.
(iii) Find the range of number of infected peoples.
(iv) Find the mean number of infected peoples found in a day to the nearest whole number.
(v) If in the next 10 days it will be reduced the number of infected peoples by half, find the expected number of infected peoples will find within next 10 days.
- (6) In a certain town the clock tower is located at the point A in the centre of the town. With respect to A, the hospital at point B is located 100m away on a bearing of 070° , the bank at point C is located 80m away on a bearing of 220° . With respect to C, the bus-stand at point D is located 120 m away and to the direction of east.
- (i) Draw a rough sketch based on the above information.
(ii) Draw a scale diagram of it using the scale of $1\text{ cm} \rightarrow 20\text{ m}$.
(iii) Find the bearing of A from D.
(iv) Find the shortest distance from bus-stand to hospital.

Part B

- (7) A and B are the general terms of two number patterns.

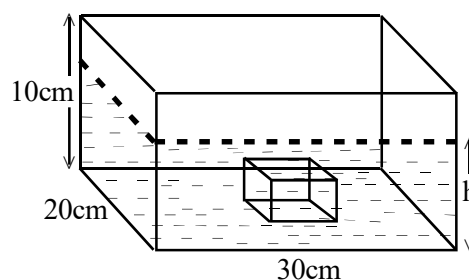
C is the general term of the pattern (A - B)

- (i) Find the 11th term of the number pattern 'A'.
(ii) Which term is 55 in the number pattern 'B'.
(iii) Show that the general term of the number pattern 'C' is $-2(n - 3)$
(iv) Find the first term and second term of the number pattern 'C'.
Hence find the difference between two successive terms of it.



- (8) 4.2 l of water is filled to a cuboid shaped glass tank of 30cm length, 20cm breadth and 10cm height. A metallic cuboid with base area 240cm^2 and height 5cm is completely immersed in the water of the above tank as shown in the diagram.

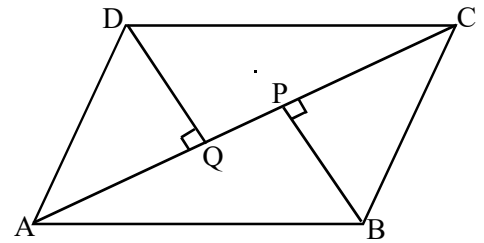
- (i) Find the capacity of the glass tank.
(ii) Find the volume of the immersed cuboid.
(iii) Find the height of the water level 'h' of the glass tank.
(iv) Having the metallic cuboid in the above tank, a metallic cube is put carefully to it. Then, if 400ml of water is over flowed, find the length of a side the cube.



- (9) Using the cm / mm scale and a pair of compasses do the following construction.
- Construct the straight line segment $PQ = 6\text{cm}$.
 - Construct the locus of points equidistance from P and Q and name the point it intersects the PQ as O.
 - Construct the triangle PQR such that $\hat{QPR} = 60^\circ$ and point R is located on the above locus.
 - Construct the angular bisector of \hat{PQR} and name the point M where it intersects the above locus.
 - Construct the circle by taking M as the centre and passes through the points P and Q.

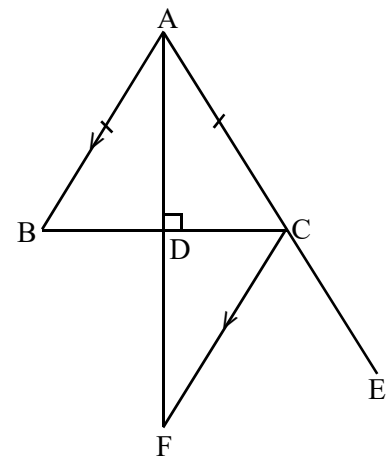
- (10) In the parallelogram ABCD, the perpendiculars drawn from B and D to the diagonal AC are BP and DQ respectively.

- Show that $\triangle ABP \cong \triangle CDQ$ and $AQ = PC$.
- By copying the given diagram on to your answer script, draw and name the perpendicular PX drawn from P to AB and the perpendicular QY drawn from Q to DC. Then show that $PX = QY$.



- (11) In the isosceles triangle ABC, $AB = AC$ and AC is produced up to E. The perpendicular drawn from A to BC is AD. The line drawn parallel to AB through C meets the produced AD at F.

- Show that $\hat{BCE} = \hat{BAC} + \hat{ABC}$.
- Show that triangle ACF is an isosceles triangle.
- If $\hat{BCF} = 60^\circ$, show that ABC is an equilateral triangle.



- (12) By giving chance to select a card from 10 equal cards numbered from 1 to 10, the way of selecting students from 10 students to clean the class room on Monday and Friday is given below.

Group A \rightarrow clean the classroom on Monday

Group B \rightarrow clean the classroom on Friday

$A = \{ \text{the students who obtained a card with multiples of 2} \}$

$B = \{ \text{the students who obtained a card with a number less than 5} \}$

- Write the set which represents the numbers relevant to clean the classroom on Monday.
- Write the set which represents the numbers belonging to the students who did not clean the class room on Friday.
- Saman selected a card randomly. Write the sample space of the numbers he can be obtained.
- Find the probability of Saman being a student of group A.
- If Piyal had to clean the classroom on both Monday and Friday, find the probability of getting numbers belongs to him.
- If Saradha had to clean the classroom on an another day, find the probability of getting a number belongs to her.

ANSWER SHEET

Paper I - Part A

01.	4.5 $4.4 \times 4.4 = 19.36$	01	02	19.	Correct points P & Q		02
02.	$5 \times 3 \times 4$ man days 60	01 01	02	20.	$\lg 2 = 0.3010$ or $\log_{10} 2 = 0.3010$		02
03.	$\frac{25 - 11}{2} = 7\text{cm}$		02	21.	$\hat{A}CB = 40^\circ$ $\hat{A}OB = 80^\circ$	01	02
04.	$4x^2 + 12x + 9$		02	22.	$2 \frac{1}{2}$ Hours $\frac{150}{60}$	01	02
05.	$x = 40^\circ$ $2x + 40^\circ + 60^\circ = 180^\circ$	01	02	23.	$30x^2y^2$		02
06.	$A = \{1, 3, 5, 7, 9\}$		02	24.	30.4 $18 + 12.4$	01	02
07.	$8 + x = 10$ $x = 2$	01 01	02	25.	38°		02
08.	$\frac{40}{100} \times 450\ 000$ Rs. 180 000	01 01	02				50
09.	Length = 44cm Width = 20cm	01 01	02	Paper - I - Part B			
10.	$x = 125^\circ$ $x = 90 + 35$	01	02	01.	(i) $\left(1 - \frac{1}{8}\right) \times \frac{5}{14}$ $\frac{5}{16}$ (ii) $1 - \left(\frac{1}{8} + \frac{5}{16}\right)$ $1 - \frac{7}{16}$ $\frac{9}{16}$	01 01 01	02 03
11.	$\frac{1}{2} + \frac{1}{3}$ $\frac{5}{6}$	01 01	02	(iii) $\frac{9}{16}$ of $\frac{2}{3} = \frac{3}{8}$ $90 \times \frac{8}{3}$ 240	01 01 01	03	
12.	$a = \frac{v^2 - u^2}{2s}$		02	(iv) 240 of $\frac{1}{8} = 30$ $30 \times 8000 = \text{Rs. } 240\ 000$	01 01	02	
13.	18×20 360cm^3	01 01	02				10
14.	PQR and XYZ A. A. S	01 01	02	02.	(i) $\frac{22}{7} \times 7$ 22m (ii) 139m	01 01	02 01
15.	$y = 3x + 1$ $\frac{10 - 1}{3 - 0} = 3$	01	02				
16.	(i) OC (ii) $\hat{A}DC$	01 01	02				
17.	$(x + 5)(x - 4)$		02				
18.	(i) $AB \perp OX$ (ii) 10cm	01 01	02				

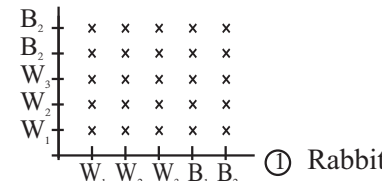
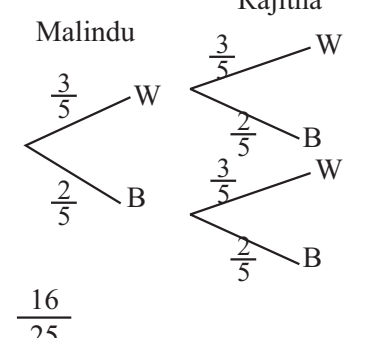
ANSWER SHEET

	(iii) $\frac{1}{8} \times \frac{22}{7} \times 21 \times 21$ 173.25m ²	01	02			
	(iv) $\frac{1}{2} \times 14 (56 + 40)$ 672m ² 498.75m ²	01			01	
	(v) Draw the rectangular Mark width of 2m	01			01	
		01			01	
					10	
03.	(i) $6000 \times 4 = \text{Rs. } 24\ 000$ $\frac{24\ 000 \times 100}{12}$ Rs. 200 000	01	03			
	(ii) $\frac{110}{100} \times 200\ 000$ Rs. 220 000	01			01	
	(iii) $\frac{12}{100} \times 220\ 000$ Rs. 26 400 $\frac{85}{100} \times 26\ 400$ Rs. 22 400 24 000 + 22 400 = Rs. 46 400	01			01	01
		01			01	
		01			01	
			10			
04.	(i) Find 30° to Yamuna 60° to Radha	01	02			
	(ii) $\frac{30 \times 10}{50}$ 6	01			01	
	(iii) $\frac{360 \times 10}{50}$ 72 72 x 2 = Rs. 144	01			01	01
	(iv) 8 + 10 + 72 = 90 $\frac{360 \times 10}{90}$ 40°	01			01	01
						10
05.	(i) People who were carrying umbrellas	01	04			
	(ii) <p>16 19 6 7 7</p>	01			01	01
	(iii) {Women who brought umbrellas}	01			01	
	(iv) 7	01			01	
	(v) 16	01			01	
			10			
Paper - II - Part A						
01.	(a) 1 400 000 - 500 000 Rs. 900 000 $\frac{4}{100} \times 500\ 000$ Rs. 20 000 900 000 - 500 000 Rs. 400 000 $\frac{8}{100} \times 400\ 000$ Rs. 32 000 20 000 + 32 000 Rs. 52 000	01	06			
	(b) $\frac{9}{100} \times 80\ 000 \times 2$ Rs. 14 400 80 000 + 14 400 Rs. 94 400	01			01	
		01			01	
		01			01	
		01			01	
			10			
02.	(i) 5	01	03			
	(ii) Accurate axis Marking at least 6 points Smooth curve	01			01	
	(iii) in between 0 & 2.2	01			01	
	(iv) -2.2 & 2.2	01			01	
	(v) $y = 3 - x^2$	01			01	
			10			

ANSWER SHEET

03.	(i) $\frac{22}{7} \times 28 \times 28 \times 10$	01	02	06.	(i) 14 - 18		01
	24 640cm ³	01			(ii) 6, 11, 16, 21, 26, 31	01	05
	(ii) $\frac{22}{7} \times 28 \times 28 \times 10 = 35 \times 32 \times h$	02	12, 44, 160, 126, 104, 124		01		
	$h = \frac{22 \times 28 \times 28 \times 10 \times 7}{35 \times 32}$	01	$\sum fx = 570$		01		
$h = 22\text{cm}$	01	570 30	01				
			04				01
	(iii) 25 000 cm ³	01		(iii) $4 \times 2 + 9 \times 4 + 14 \times 10 + 19 \times 6$			
	25 l	02		+ 24 x 4 + 29 x 4		01	
	$\frac{25}{5} = \text{minutes } 5$	01	04	8 + 36 + 140 + 114 + 96 + 116		01	
			<u>10</u>	510		01	
				510 x 180		01	04
				Rs. 91 800			
							<u>10</u>
04.	(a) $x + y = 20$	01	07	Paper - II - Part B			
	$80x + 50y = 1360$	01					
	$50x + 50y = 1000$	01		07.	(i) 10		01
	$30x = 360$	01			(ii) Arithmetic Progressions		01
	$x = 12$	01			(iii) $T_n = a + (n - 1) d$	01	03
	$y = 8$	01			$T_{10} = 4 + 9 \times 3$	01	
	No. of mango plants = 12 } No. of guava plants = 8 }	01			= 31	01	
	(b) $2x < 10$	01		(iv) $S_n = \frac{n}{2} (a + l)$	01		
	$x < 5$	01		= $\frac{10}{2} (4 + 31)$	01		
	4	01	03	= 5 x 35	01		
			<u>10</u>	= 175	01		
				175 + 1 = 176	01	05	
						<u>10</u>	
05.	(i) $x - 2$		01	08.	(i) AB or AC	01	03
	(ii) $\frac{1}{2} x (x - 2) = 24$		02	60° construction	01		
	(iii) $x^2 - 2x - 48 = 0$	01		construction	01		
	$(x - 8) (x + 6) = 0$	01		(ii) Accurate construction		02	
	$x = 8$ or $x = -6$	01		(iii) Angular Bisector	02	03	
	BC = 8cm	01	04	to D	01		
	(iv) AB = 6cm	01		(iv) Circle	01		
	$AC^2 = 8^2 + 6^2$	01		4.3 ± 0.1	01	02	
	AC = 10cm	01	03			<u>10</u>	

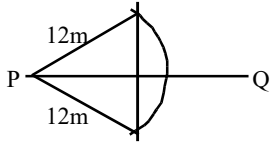
ANSWER SHEET

<p>09. $BX = CX$ (Data) 01 $\hat{X}BC = \hat{X}CB$ 01 $2 \times \hat{X}BC = 2 \times \hat{X}CB$ 01 $\hat{A}BC = \hat{A}CB$ 01 $\hat{A}BC + \hat{A}CB + 40^\circ = 180^\circ$ 01 $\hat{A}BC = \hat{A}CB = 70^\circ$ 01 $\hat{X}BC = \hat{X}CB = 35^\circ$ 01 $\hat{B}XC = 180^\circ - 70^\circ$ 01 $\hat{B}XC = \hat{B}YC$ 01 $\hat{B}YC = 110^\circ$ 01</p>	<p>01 01 01 01 01 01 01 01 01 01</p>	<p><u>10</u></p>	<p>12. (i) ② Rabbit 02  (ii) $\frac{9}{25}$ 02 (iii) for answer 01 (iv) $\frac{2}{5}$ 01</p>
<p>10. (i) $\hat{P}QB = \hat{P}AB$ (Angles in the same segment) 01 $\hat{P}QB = \hat{Q}PB$ (PQB isosceles triangle) 01 $\hat{Q}PB = \hat{P}AB$ (Axiom) 02 (ii) $\hat{A}PB = 90^\circ$ (Angles in the semi circle) 01 $\hat{A}PX + \hat{X}PB = 90^\circ$ 01 $\hat{A}PX + \hat{P}AX = 90^\circ$ 01 $\hat{A}XP = 90^\circ$ 01 $AB \perp PQ$ 04 (iii) In the APX and AQX $PX = XQ$ (because $AB \perp PQ$) 01 $AX = AX$ (common side) 01 $\hat{A}XP = \hat{A}XQ = 90^\circ$ 01 APX AQX (S.A.S) 01 $AP = AQ$</p>	<p>01 01 02 01 01 01 01 04 01 01 01 01</p>	<p><u>04</u> <u>10</u></p>	<p>(v) Malindu Rajitha  $\frac{16}{25}$ 02 04</p>
<p>11. Rough diagram 02 Draw $AC = 6\text{cm}$ 02 40° 01 Draw $AB \perp AC$ 01 Triangle 01 AC scale length 01 $5.2\text{cm} \pm 0.1$ 5.2×2 01 $10.4\text{m} + 0.2$ 01</p>	<p>02 02 01 01 01 01 01 01</p>	<p><u>04</u> <u>10</u></p>	<p><u>10</u></p>

First Term Test - Grade 10 - 2020
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Mathematics - Answer Paper

Paper I

Part A					
(1)	3.5 -----	2	(15)	40° ----- 3x = 120 -----	2 1
(2)	x ² - 3x - 10 ----- x ² + 2x - 5x - 10 -----	2 1	(16)	$\frac{3-x}{7}$ ----- $\frac{5-x-2}{7}$ -----	2 1
(3)	{ 3, 7, 8 } -----	2	(17)	S. A. S -----	2
(4)	110° ----- vertically oppsit angle 70° -----	2 1	(18)	4 days ----- $\frac{8 \times 6}{12}$ -----	2 1
(5)	13 -----	2	(19)	(i) 100cm ² ----- $\frac{1}{2} \times 40 \times 5$ -----	2 1
(6)	25% -----	2	(20)	60° ----- ∠BAC = 50° -----	2 1
(7)	65° ----- 90 - 25 -----	2 1	(21)	x = 5 ----- 7 - 2x + 4 = 1 -----	2 1
(8)	28cm ----- $\frac{1}{4} \times 2 \times \frac{22}{7} \times r = 44$ -----	2 1	(22)		2
(9)	$\frac{1}{x^2}$ ----- x ⁻² -----	2 1	(23)	$\frac{13}{100}$ -----	2
(10)	(x - 6)(x + 1) ----- x ² - 6x + x - 6 -----	2 1	(24)	(i) 80° ----- (ii) 70° -----	1 1 - 2
(11)	10cm ----- BC × 7 = 14 × 5 or $\frac{14 \times 5}{7}$ -----	2 1	(25)	(i) 2 ----- (ii) 3 -----	1 1 - 2
(12)	6x ² y ² -----	2			
(13)	70° ----- ∠ACB = x or 2x = 140° -----	2 1			
(14)	5cm ----- $\frac{1}{2} \times 6 \times AD = 15$ -----	2 1			

B කොටස

(1)	(i)	$\frac{5}{6}$	-----	1
		$\frac{5}{6} \times \frac{3}{5}$	-----	1
		$\frac{1}{2}$	-----	1 - 3
	(ii)	$\frac{1}{6} \times \frac{1}{2}$	-----	1
		$\frac{2}{3}$	-----	1
		$\frac{1}{3}$	-----	1 - 3
	(iii)	1800 ml	-----	2
		$600 \div \frac{1}{3}$	-----	1
	(iv)	$1800 \times \frac{1}{6}$	-----	1
		300 ml	-----	1 - 2
				10

(2)	(i)	$2 \times \frac{22}{7} \times 35 \times \frac{1}{4}$	-----	1
		55cm	-----	1 - 2
	(ii)	13 cm	-----	2
		5cm obtaining $5^2 + 12^2$	-----	1
	(iii)	$40 + 35 + 12 + 13 + 55$	-----	1
		155 cm	-----	1 - 2
	(iv)	$40 \times 35 = 1400cm^2$	-----	1
		$\frac{22}{7} \times 35 \times 35 \times \frac{1}{4}$	-----	1
		962.5 cm ²		
		$\frac{1}{2} \times 12 \times 5 = 30cm^2$	-----	1
		467.5cm ²	-----	1 - 4
				10

(3)	(i)	$360 - (117 + 90 + 45)$	-----	1
		$54^0 (\frac{108}{2})$	-----	1 - 2
	(ii)	$\frac{360 \times 5}{45}$	-----	1
		40	-----	1 - 2

(iii)	$\frac{40 \times 117}{360}$ or $\frac{117}{9}$	-----	1
	13	-----	1 - 2
(iv)	$\frac{40}{4} = 10$	-----	1
	$10 + 10 = 20$	-----	1
	$\frac{360 \times 20}{45}$	-----	1
	160 ⁰	-----	1 - 4
			10

(4)	(i)	50×8	-----	1
		400 days	-----	1 - 2
	(ii)	$\frac{10000}{400}$	-----	1
		25 l	-----	1 - 2
	(iii)	$10000 - 50 \times 3 \times 25$	-----	1
		6250 l	-----	1 - 2
	(iv)	$6250 - 250 = 6000$	-----	1
		$\frac{6000}{40 \times 25}$	-----	1
		6 days	-----	1
		$6 + 3 = 9$ days	-----	1 - 4
				10

(5)	(i)	for correct regions	-----	4
	(ii)	correct answer	-----	2
	(iii)	$(X \cup Y)'$	-----	2
	(iv)	$\{a\} \{b\} \{a, b\}$	-----	1
		any two	-----	1 - 2
				10

Paper II

Part A			
(1)	(i)	Rs. 9000 ----- Rs. 159 000 ----- $\frac{120000 \times 90}{100}$ ----- Rs. 10 8000 ----- Rs. 73 600 ----- 108 000 + 73 600 ----- Rs. 181 600 ----- 181 600 - 159 000 ----- Rs. 22 600 ----- 22 600 > 22 000 ----- -----	1 1 1 1 1 1 1 1 1 1 10
(2)	(i)	3, -1 ----- (ii) Carrect axis ----- Marking points ----- drawing graph ----- (iii) 2 ----- (iv) by potting at least two points drawing the graph $y = x$ ----- (1, 1) ----- -----	1 1 1 1 - 3 1 3 1 - 4 10
(3)	(i)	$(x + 5)^2 - (x + 1)(x - 3)$ ----- $x^2 + 10x + 25 - (x^2 - 2x - 3)$ ----- 12x + 28 ----- (ii) $12x + 28 = 88$ ----- $12x = 60$ ----- $x = 5m$ ----- 10 m ----- 100 m ² ----- -----	2 2 1 - 5 1 1 1 1 2 - 5 10
(4)	(a)	$2x = 6$ ----- $x = 31$ ----- for substitution ----- $y = 5$ ----- (b) (i) $2x^2 - 4x + 3x - 6$ ----- $2x(x - 2) + 3(x - 2)$ ----- $(x - 2)(2x + 3)$ ----- (ii) $5(16 - x)$ ----- $5(4^2 - x^2)$ ----- $5(4 - 2)(4 + x)$ ----- -----	1 1 1 1 - 4 1 1 1 - 3 1 1 1 - 3 10
(5)	(i)	9 ----- 6 ----- 5 ----- 12, 40, 90, 77, 64, 45 ----- 328 ----- $328/50$ ----- 6.56 or 6.5 ----- 7 ----- (v) $\frac{7}{2} \times 10$ ----- 35 ----- -----	1 1 1 1 1 1 1 1 - 5 1 1 1 - 2 10
(6)	(i)	sketch with measurements ----- (ii) bearing, scale for B ----- bearing, scale for C ----- bearing, scale for D ----- (iii) $312^\circ \pm 2^\circ$ ----- (iv) $5cm \pm 0.1cm$ ----- $100m \pm 2m$ ----- -----	2 2 2 1 - 5 1 1 1 - 2 10
Part A			
(7)	(i)	$3 \times 11 + 1$ ----- 34 ----- (ii) $6n - 5 = 55$ ----- $n = 60/6$ ----- $n = 10$ ----- (iii) $3n + 1 - (6n - 5)$ ----- $-3n + 6$ ----- (iv) 3, 0 ----- -3 ----- -----	1 1 - 2 1 1 1 - 3 1 1 - 2 2 1 - 3 10
(8)	(i)	$30 \times 20 \times 10$ ----- $6000 ml$ or $6 l$ ----- (ii) 240×5 ----- $1200 cm^3$ ----- (iii) $4200 + 1200$ ----- $5400 ml$ -----	1 1 - 2 1 1 - 2 1 1

$\frac{5400}{30 \times 20}$	-----	1
9cm	-----	1
(iv) 1000 cm ²	-----	1
10cm	-----	1
-----	-----	2
-----	-----	10
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(9) (i) drawing PQ	-----	1
(ii) for perpendicular bisector	-----	1
O	-----	1
(iii) constructing 60°	-----	2
for Δ PQR	-----	1
(iv) angular bisector	-----	2
for M	-----	1
(v) constructing circle	-----	1
-----	-----	10
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(10) (i) AB = DC (opposite side)	-----	1
$\hat{BAP} = \hat{DCQ}$ (alternate angles)	-----	1
$\hat{APB} = \hat{CQD} = 90^\circ$	-----	1
$ABP\Delta \equiv CDQ\Delta$ (A. A. S)	-----	1
AP = QC	-----	1
(corresponding element of $\equiv \Delta$)	-----	1
AP - QP = QC - QP	-----	1
AQ = PC	-----	6
(ii) copying and drawing perpendicular	-----	2
$\frac{1}{2} \cdot AB \cdot PX = \frac{1}{2} \cdot DC \cdot QY$	-----	1
AB = DC	-----	1
PX = QY	-----	4
-----	-----	10

(11) (i) $\hat{FCE} = \hat{BAC}$ (corresponding \sphericalangle)	-----	1
$\hat{BCF} = \hat{ABC}$ (alternate \sphericalangle)	-----	1
$\hat{FCE} + \hat{BCF} = \hat{BAC} + \hat{ABC}$	-----	1
$\hat{BCE} = \hat{ABC} + \hat{ABC}$	-----	3
(iii) $\hat{BAD} = \hat{DAC}$	-----	1
$\hat{BAD} = \hat{DFC}$	-----	1
$\therefore \hat{DAC} = \hat{DFC}$	-----	1
AC = CF	-----	1
(iii) $\hat{ABC} = 60^\circ$	-----	1
$\hat{ACB} = 60^\circ$	-----	1
$\hat{BAC} = 60^\circ$	-----	1
-----	-----	3
-----	-----	10
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(12) (i) {2, 4, 6, 8, 10}	-----	1
(ii) {5, 6, 7, 8, 9, 10}	-----	1
(iii) S = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}	-----	2
(iv) $\frac{5}{10}$	-----	2
(v) $\frac{2}{10}$	-----	2
(vi) $\frac{3}{10}$	-----	2
-----	-----	10