වයඹ පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව
Provincial Department of Education - NWP

දෙවන වාර පරීක්ෂණය - 2025
Second Term Test - 2025

32 E I

Grade 09

Mathematics

Time :2 ½ Hours

Name / Index No. :

Part - I

- **Answer all the questions from 1 - 20 on this paper itself.**
- **Each question carries 02 marks.**

01. Find the 5th term of the number pattern with the general term 10 - 2n.

02. Simplify. $1001_{two} - 101_{two}$

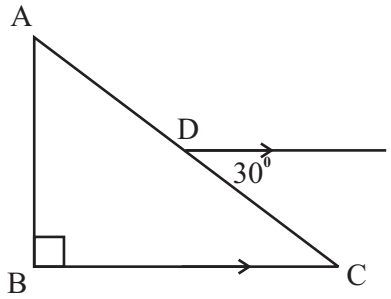
03. Write as a product of two factors. $x^2 - 9y^2$

04. Make d as the subject of the formula $l = a + (n - 1)d$.

05. When a certain number is rounded off to the nearest 10, the number 50 is obtained. Find the sum of the least value and the greatest value that this number can take.

06. Simplify. $15a^{-3} \div 3a^2$

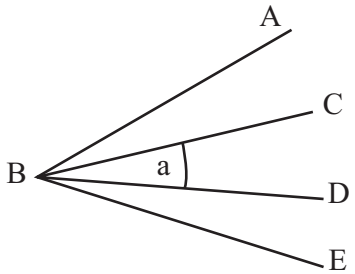
07. Find the magnitude of $B\hat{A}C$.



08. Simplify. $\frac{2}{7} + \left(\frac{3}{4} \text{ of } \frac{8}{9}\right)$

09. Nimal sold an item for Rs. 450 with a loss of Rs. 50. Find the loss percentage he incurred.

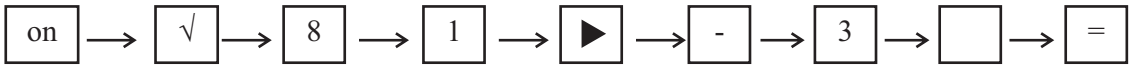
10. Among the angles in the figure, $A\hat{B}C = D\hat{B}E$. Write the relationship between $A\hat{B}D$ and $C\hat{B}E$.



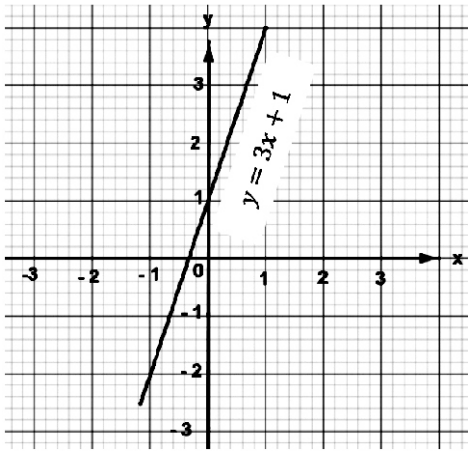
11. Find the value of 'f' when C = 35 in the formula $C = \frac{5}{9}(f - 32)$.

12. The length, breadth and height of a cuboidal shaped tank are 4m, 3m and 2m respectively. Find its volume in liters.

13. The order in which the keys needed to be pressed to find the value of $\sqrt{81} - 3^2$ is given bellow. Fill in the blanks with suitable key values.



(space)

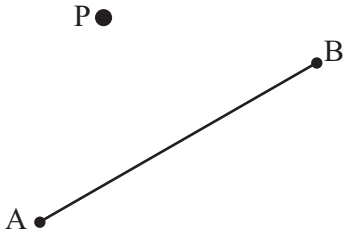
14. 

Draw the straight line which is parallel to the given straight line and having the intercept -2 on the same cartesian plane and write the equation of it.

15. What is the price in US- dollars of an item worth Rs. 29620.00 in a day which pays Rs. 296. 20 for 1 Us dollar ?

16. Write 5.401×10^{-3} in general form.

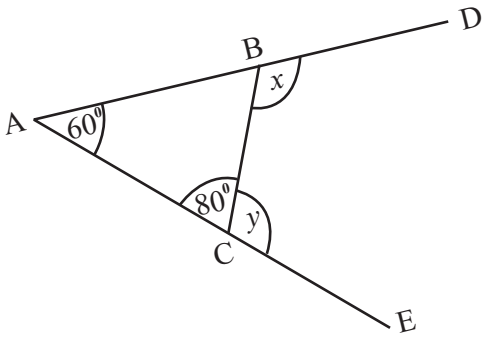
17. Denote the construction lines needed to find the shortest distance from the point P to the given straight line AB.



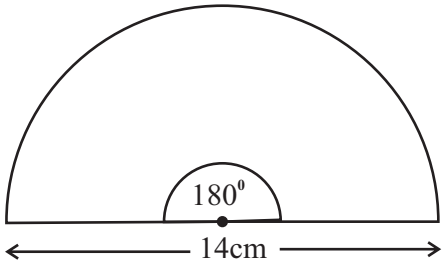
18. Find the values of x and y separately.

$x =$

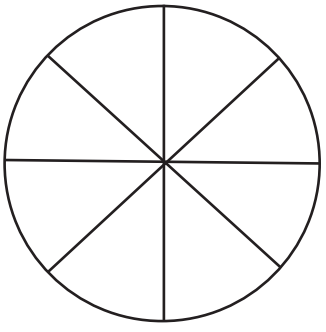
$y =$



19. Find the arc length of this figure.



20. This figure shows a wheel made with 8 spokes by keeping same gaps. If the arc length between two successive spokes of this wheel is 11 cm, find the length of a spoke.



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

01. (A) At the beginning of the "Equations" lesson, the mathematics teacher gave the following activity for the students.

Activity : Think a number you like. Multiply it by 3 and add 5 to it.

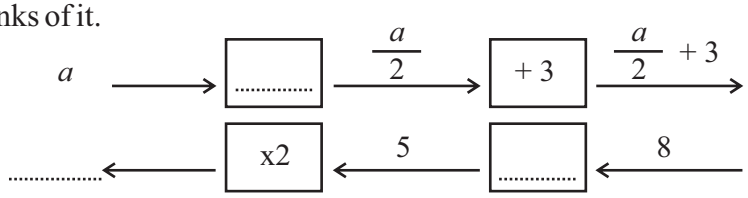
(i) If the number thought by Banuka was 8, find the answer he obtained. (02 marks)

(ii) If the number thought by Dasun was "x" write the algebraic expression relevant to the above activity. (01 mark)

(iii) At the end of the above activity the answer obtained by Jagath was 23. By taking an unknown term you like for the number thought by Jagath, write it as an equation. (01 mark)

(iv) By solving the above equation, find the number thought by Jagath. (02 marks)

(B) (i) A flow diagram is used to solve the equation $\frac{a}{2} + 3 = 8$. Write the suitable values for the blanks of it.



(03 marks)

(ii) Solve. $\frac{3(x-2)}{4} = 6$ (03 marks)

(iii) Solve the following pair of simultaneous equations.

$x + 2y = 11$

$x - 4y = 5$ (04 marks)

02. (i) Write the gradient and the intercept of the function $2x + 3y = 6$. (03 marks)

(ii) To draw the graph of the function $2x + 3y = 6$, fill in the blanks of the following table. (02 marks)

x	-3	0	3	6
y	4			-2

(iii) According to the above value table, draw the graph of the function $2x + 3y = 6$ on a suitable cartesian plane. (04 marks)

(iv) Write the coordinates of the intersection points of x axis and y axis with the graph. (02 marks)

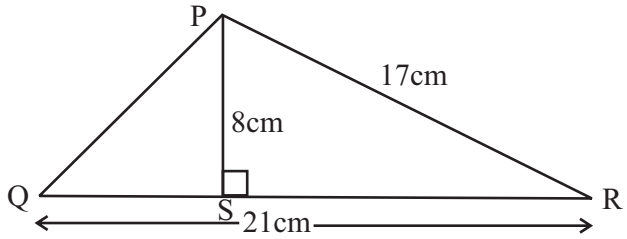
03. (A) A part of 9m of an iron post is erected vertically on the horizontal ground. A wire with the length of 15 m tied to the top of the post is connected to the ground.

(i) Name the iron pole as AB and the point where the wire tied to the top of the pole (A) connects to the ground as C and draw a rough diagram with relevant measurements. (03 marks)

(ii) Write the Pythagoras relationship between AB, BC and AC. (01 mark)

(iii) According to it, find the distance of BC. (03 marks)

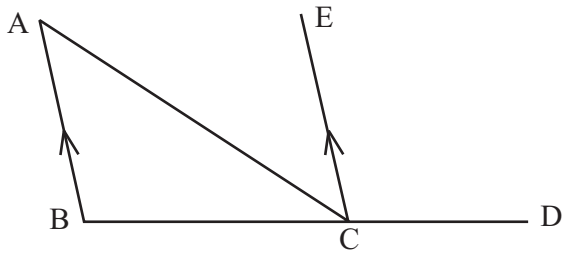
(B)



According to the measurements given in the figure, find the length of PQ. (04 marks)

---

04. (A) A note which represents the relationship among the angles in the following figure is given below. Copy that note in to your answer sheet and fill in the blanks.



$A\hat{B}C$ = ... (Corresponding angles) ⟶ (1)

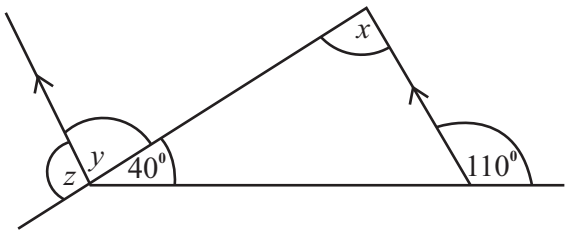
$B\hat{A}C = A\hat{C}E$ (.....) ⟶ (2)

(1) + (2) =>

$A\hat{B}C + B\hat{A}C$ = ... + ...

$A\hat{B}C + B\hat{A}C$ = ... (05 marks)

(B)



By giving reasons, find the magnitude of the angles x, y and z. (06 marks)

05. Do the following construction using a cm / mm scale and a pair of compasses.

(i) Construct the triangle ABC such that AB = 10 cm, $B\hat{A}C = 60^0$ and AC = 8cm. (04 marks)

(ii) Construct the angle bisectors of $B\hat{A}C$ and $A\hat{B}C$, and name the intersection point of the angle bisectors as O. (03 marks)

(iii) Construct a perpendicular to AB from O. Name the meeting point of the perpendicular with AB as M. (03 marks)

(iv) Construct the circle taking OM as the radius. (01 marks)

---

06. (i) Write an example of situations where inverse propotions shown in day today life. (01 mark)

(ii) Nimal's height is 75 cm and Kamal's height is 1 m. Write the ratio between the heights of Nimal and Kamal. (02 marks)

(iii) Fill in the blank cages according to the following equivalent ratios. (02 marks)

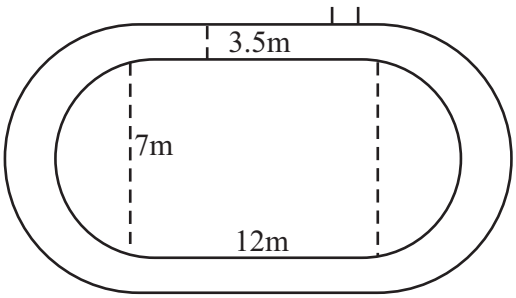
8 : 12 = 2 : ☐ = ☐ : 60

(iv) If the price of 40 mangoes is Rs. 1600, find the number of mangoes that can be bought for Rs. 2000. (02 marks)

(v) A seller buys an item for Rs. 200 and marks its price by keeping a profit of 10 %. When selling it, if he gives a 10 % discount on the marked price, find the selling price of the item. Here did the seller make a profit or a loss ? (04 marks)

---

07. A flower bed consists of a rectangular part with the length of 12 m and the breadth of 7 m and two semi circular parts and a road around it with the breadth of 3.5 m are shown in the figure. Red roses are planted in the rectangular part and white roses are planted in the two semi circular parts.



(i) Find the arc length of a semi circular part of the flower bed. (02 marks)

(ii) Find the perimeter of the flower bed. (02 marks)

(iii) If the total area of the flower bed is 122.5 cm^2, find the area of the parts with white roses.

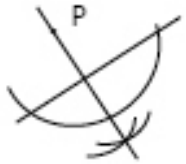
(02marks)

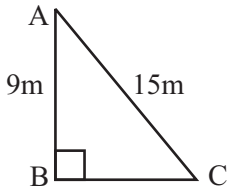
- Wooden posts have been erected on the outer boundary of the road with the gap of 2 m and a wire has been stretched accross them such that by leaving a space between only two posts for entering the road.

(iv) Find the number of wooden posts needed for it. (03 marks)

(v) If the price of 1 m of wire is Rs. 138, find the minimum amount to be spent for the wire needed. (02 marks)-

පිළිතුරු පත්‍රය

01.	0 10 - 2 x 5	 1	2
02.	$100_{\text{දෙක}}$		2
03.	$(x - 3y)(x + 3y)$ $x^2 - (3y)^2$	 1	2
04.	$d = \frac{l - a}{n - 1}$ $(n - 1)\,d = l - a$	 1	2
05.	99 54 + 45	 1	2
06.	$\frac{5}{a^5}$ $\frac{15}{3a^2 \times a^3}$	 1	2
07.	$B\hat{A}C = 60^0$ $A\hat{C}B = 30^0$	 1	2
08.	$\frac{2}{7} + \frac{2}{3} = \frac{20}{21}$	1+1	2
09.	$\frac{50}{500}$ x 100 % 10 %	1 1	2 2
10.	$A\hat{B}D = C\hat{B}E$		2
11.	$F - 32 = \frac{35 \times 9}{5}$ $F = 95$	1 1	 2
12.	$24\ m^3$ $24000\ l$	1 1	 2
13.	$\boxed{x^2}$		2
14.	රේඛාව ඇඳීම $y = 3x - 2$	1 1	 2
15.	29620 ÷ 296.20 100	1 1	 2
16.	0.005401		2
17.	 චාප ඇඳීම P සිට රේඛාව ඇඳීම	1 1	2
18.	$x = 140^0$ $y = 100^0$	1 1	2
19.	$\frac{1}{2}$ x 2 x $\frac{22}{7}$ x 7 22 cm	1 1	2
20.	$\frac{1}{8}$ x 2 x $\frac{22}{7}$ x $r = 11$ $r = 14$ cm	1 1	2

	II කොටස		
01.	a) (i) 8 x 3 + 5	1	
	29	1	2
	(ii) $3x + 5$	1	1
	(iii) $3x + 5 = 23$	1	1
	(iv) $3x = 18$	1	
	$x = 6$	1	2
	b) (i) $\boxed{\div 2}$	1	
	10 $\boxed{-3}$	2	3
	(ii) $3(x - 2) = 24$	1	
	$x - 2 = 8$	1	
	$x = 10$	1	3
	(iii) $2y - (-4y) = 6$ හෝ	1	
	$6y = 6$		
	$y = 1$	1	2
	$x + 2(1) = 11$	1	
	$x = 9$	1	2
			16
02.	(i) $y = 2 - \frac{2}{3}x$	1	
	අනුක්‍රමණය $= -\frac{2}{3}$	1	
	අන්තඃඛණ්ඩය = 2	1	3
	(ii) 2 , 0	1+1	2
	(iii) නිවැරදි ඛණ්ඩාංක තලය ඇඳීම	1	
	ලක්ෂ්‍ය ලකුණු කිරීම	2	
	ප්‍රස්තාරය ඇඳීම	1	4
	(iv) (3, 0) (0 , 2)	1+1	2
			11
03.	(a) (i) ත්‍රිකෝණය ඇඳීම	1	
	90^0 ලකුණු කිරීම	1	
	9m හෝ 15m ලකුණු කිරීම	1	3
			
	(ii) $AC^2 = AB^2 + BC^2$	1	1
	(iii) $15^2 = 9^2 + BC^2$	1	
	$\sqrt{144} = BC$	1	
	$BC = 12\ m$	1	3
	(b) $SR^2 = 17^2 - 8^2$	1	
	$SR = \sqrt{225}$		
	$SR = 15cm$	1	
	$SQ = 6$	1	
	$PQ^2 = 6^2 + 8^2$		
	$PQ = 10cm$	1	4
			11

පිළිතුරු පත්‍රය

04.	A) $E\hat{C}D$	1	
	ඒකාන්තර කෝණ	1	
	$E\hat{C}D + A\hat{C}E$	2	
	$A\hat{C}D$	1	5
	B) $x = 110 - 40$		
	$= 70^0$	2	
	$y = 70^0$	2	
	$z = 180 - 70$		
	$= 110^0$	2	6
			11
05.	(i) AB = 10cm නිර්මාණය	1	
	$A = 60^0$ නිර්මාණය	1	
	AC = 8 cm වන ලෙස C ලකුණු කිරීම	1	
	ABC ත්‍රිකෝණය	1	4
	(ii) කෝණ සමච්ඡේදක 1+1	2	
	O ලකුණු කිරීම	1	3
	(iii) O සිට AB ට ලම්බකය නිර්මාණය	2	
	M ලකුණු කිරීම	1	3
	(iv) වෘත්තය නිර්මාණය	1	1
			11
06.	(i) නිවැරදි උදාහරණයකට	1	1
	(ii) 75 : 100	1	
	3 : 4	1	2
	(iii) 8 : 12 = 2 : 3 = 40 : 60	2	2
	(iv) 1600 ÷ 40		
	රු. 40.00	1	
	2000 ÷ 40		
	50 හෝ	1	2
	$\frac{40}{1600}$ x 2000	1	
	50	1	
	(v) $\frac{110}{100}$ x 200	1	
	රු. 220.00	1	
	$\frac{90}{100}$ x 220 හෝ රු. 198.00	1	
	අලාභයක්	1	4
			11

07.	(i) $\frac{1}{2}$ x 2 x $\frac{22}{7}$ x 3.5	1	
	11m	1	2
	(ii) 12 + 12 + 22	1	
	46m	1	2
	(iii) 122.5 - 12 x 7	1	
	38.5 m^2	1	2
	(iv) 2 x $\frac{22}{7}$ x 7		
	44 m	1	
	44 + 12 + 12 = 68	1	
	68 ÷ 2 = 34	1	3
	(v) 66 x 138	1	
	රු. 9 108	1	2
			11