දකුණු පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව / தென் மாகாணக் சுல்வித் திணைக்களம்

DEPARTMENT OF EDUCATION-SOUTHERN PROVINCE

THIRD TERM TEST - 2021 (MARCH 2022)

| **Grade 9** | **Mathematics - 1** | **Time: 2 hours** |

Name/ Index No ....

Part I

❖ **Write down the answers for all the questions in the paper it self.**

❖ **Each question carries 2 marks.**

01. Write the first two terms of the number pattern which denotes 3n - 1 as its general term.
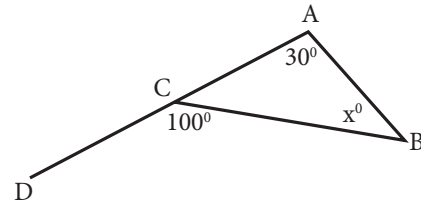
02. Find the value.

$11_{two} + 101_{two}$

03. Write 253.85 in scientific notation.

04. Find the percentage of the profit made by selling a book bought for Rs. 60 for Rs. 75.

05. Find the value of x
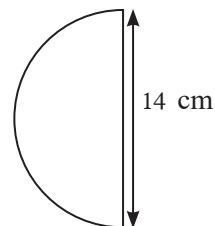

06. Solve $\dfrac{m - 5}{8} = 5$

07. Round off 201.539 to the first decimal place.

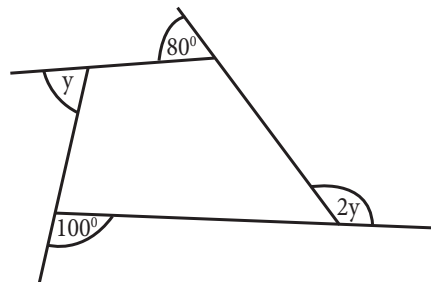08. Fill the blank using suitable symbol.

A = [ම, හ, නු, ව, ර }

හ .... A

09. Find the arc length of the semicircle.

14 cm
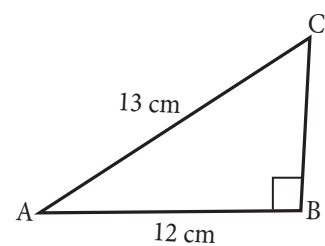
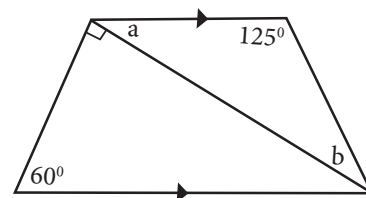10. Find the value of y

80^0

y

100^0

2y

11. Solve the inequality $3x - 1 > 5$ and write the solutions for x.

12. Find the length BC.

C

13 cm

A

12 cm

B

13. Find the value of a and b

a

125^0

60^0

b

14. Factorize $4a^2 - b^2$

15. Write the perimeter of the rectangle ABCD using x.

A _____ D

(x - 2)

B (x + 3) C

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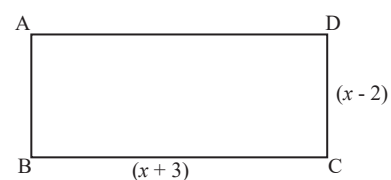
16. Select and underline the correct answer that represent a pair of adjacent angles.

   i. $P\hat{T}Q$ and $Q\hat{O}R$

   ii. $P\hat{T}Q$ and $R\hat{O}S$

   iii. $Q\hat{O}R$ and $R\hat{O}S$

P
Q
T
R
O
S

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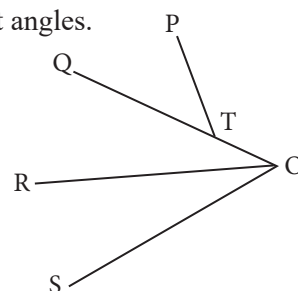
17. Write the gradient (m) and the intercept (c) of the graph of the function $y = -\dfrac{1}{3}x + 5$

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18. Place a '✓' infront of the correct statements.
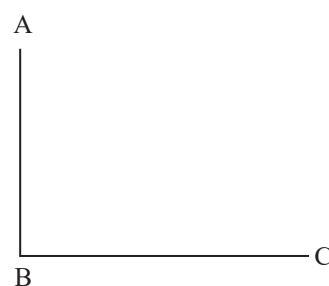
   i.   All the sides are equal in a regular polygon ☐

   ii. The sum of the interior angles of any polygon is 180^0 ☐

   iii. A pair of interior angles in a triangle cannot be obtuse angles. ☐

---

19. Simplify and write the answer with positive indices.

$\left(\dfrac{x^2}{x^5}\right)^3$

---

20. Mark the locus of the points equidistance from line AB and BC.

A

B C

දකුණු පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව / தென் மாகாணக் கல்வித் திணைக்களம்
DEPARTMENT OF EDUCATION-SOUTHERN PROVINCE

THIRD TERM TEST - 2021 (MARCH 2022)

Grade 9	**Mathematics - 1I**

Name/ Index No ....

❖ **Answer 5 questions only.**

Each question carries 12 marks

(01) a) 6, 10, 14, 18, ... is the number of patients infected with covid disease reported within 4 consecutive days in a city.

    (i) Find the common difference   (1 mark)

    (ii) Write next 2 terms of the number sequence using common difference.   (2 marks)

    (iii) Write the general term of the number sequene   (2 marks)

    (iv) If patients were reported according to the above pattern, find the number of patients expected to be reported on the 50th day.   (2 marks)

    (v) On which day 50 patients are reported?   (2 marks)

  b) Factorize $x^2 + 4x - 5$ (3 marks)

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(02) a) Simplify $\left(\frac{1}{3} + \frac{1}{2}\right) \div 1\frac{1}{2}$ (4 marks)

  b) A pair of trouser is bought for Rs. 400 and marks its selling price to earn a profit of 10% When selling the pair of trouser, a discount of 5% is offered.

    (i) What is the marked price?   (2 marks)

    (ii) What is the selling price after giving the discount?   (3 marks)

    (iii) Find the profit he got after selling the trouser   (1 mark)

    (iv) Find the profit percentage   (2 marks)

(03) The square shaped plot of land 20m long shown in the figure has a circular plant nursery with a radius of 7m in the center.
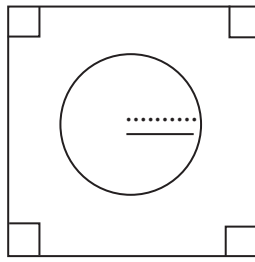
 (i)   Copy the figure and insert the given information.   (2 marks)

(ii)   Find the area of the square polt.   (2 marks)

(iii)   Find the area of the land without the plant nursery.   (4 marks)

(iv)   If it costs Rs. 220 per square metre to cover the land without the nursery with grass completely. Find the minumum amount of money required   (2 marks)

(v) What is the length of the fence to be built around the plant nursery   (2 marks)

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

| x	-2	-1	0	1	2	3
y	-6	....	-2	....	2	4

(i)   Write the gradient and the intercept of the graph.   (2 marks)

(ii) Find the value of y when $x = -1$ and $x = 1$ (2 marks)

(iii) Draw the graph of the function in a suitable coordinate plane   (3 marks)

(iii) Write the coordinates of the point at which the graph intersect the y axis   (2 marks)

(iv) Write the equation of the straight line that is parallel to the line y = 2x - 2 and passes through the point (0, 3)   (3 marks)

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(05) The table below shows the number of packets of milk powder sold within a day in a particular shop.

Number of milk packets	5	10	15	20	25	30	35	40	45
Number of customers	5	7	4	16	15	11	10	4	8

(i)   Write the range of these data.   (2 marks)

(ii) Find the mode of the data.   (1 mark)

(iii) Find the mean number of milk packets sold within a day to the nearest whole number

(6 marks)

(iv) If a profit of Rs. 10 is made from a packet, what is the expected profit from the sale of milk powder within 3 months?   (3marks)
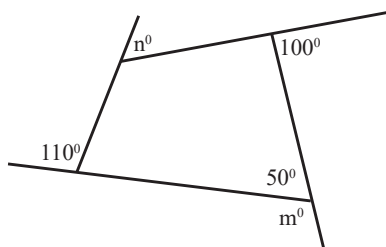
(06)
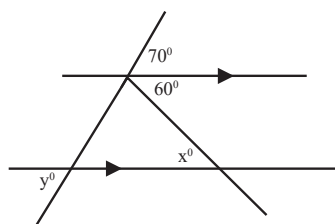
(a) Find the values of x and y with reasons by using the information given. (4 marks)

(b)

(i) Find the magnitude of an exterior angle of a regular polygon with 10 sides. (4 marks)

(ii) Find the values of m and n according to the diagram given. (4 marks)

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(07) a) (i) X = { Letters of the word "KATARAGAMA}

List the elements of the set X.
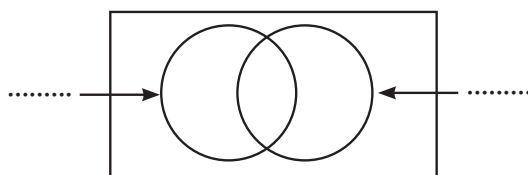
(2 marks)

(ii) How many elements are there in the set X (1 mark)

b) $\mathcal{E}$ = { 1, 2, 3, 4, 5, 6, 7, 8, 9}

P = { 2, 4, 6, 8}

Q = { 3, 6, 9}

Copy the venn diagram given below and include the elements in the sets in the venn diagram

(6 marks)

.... → ← ....

Write the followings using the information in the venn diagram.

(i) P ∩ Q (1 mark)

(ii) P ∪ Q (1 mark)

(iii) Q' (1 mark)