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කැලණිය අධ්‍යාපන කලාපය
Kelaniya Education Zone

දෙවන වාර පරීක්ෂණය – 2024
Second Term Test – 2024

ශ්‍රේණිය Grade	9	විෂයය Subject	ගණිතය Mathematics	කාලය Time	02 hours

Name / Index No: _____

Paper I

- Answer all the questions from 1 to 20 on this paper itself.
- Each question carries 2 marks from 1 to 20. (2 x 20 = 40)

1) Write the next two terms of the number pattern 4, 7, 10, 13, …

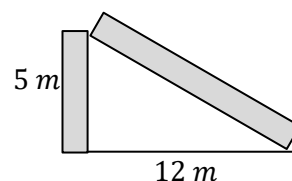2) Write the number 28 000 in scientific notation.

3) Find the value of x.
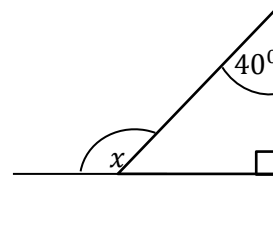
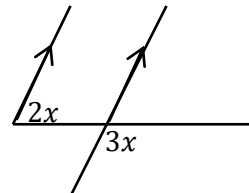4) A camera worth Rs. 40 000 is intended to be sold at a profit of 20%. Find the selling of the camera.

5) Factorize : $a^2 - 9$

6) Write $2x^{-2}$ with positive index.

7) The given figure shows how a pole fixed directly as a support for a Vesak Pantheon is broken. Find the height of the support pole before it broken.
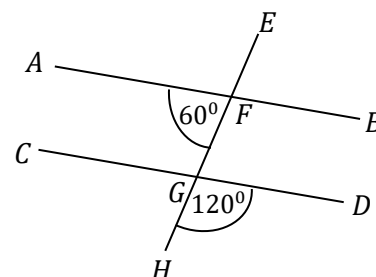
5 m

12 m

8) Find the value of x according to the given figure.

2x

3x

9) What is $\frac{2}{3}$ of $2\frac{5}{8}$?

10) According to the given figure, write a relationship between the two straight lines AB and CD.

E

A

60^0 F

B

C

G 120^0

D

H

11) Find the capacity of a cuboid shaped water tank with the length, breadth and height are $2\ m, 1\ m$ and $0.8\ m$ respectively, in liters. $(1\ m^3 = 1000\ l\ )$

12) Find the value of $2x\ +\ 4y$ when $x = \frac{1}{2}$ and $y = -\frac{1}{4}$.

13) The price of 12 books is Rs. 360. Find the number of books that can buy for Rs.240.

14) Write the gradient of the straight line $y = 2x + 5$.

15) Solve : $2x - 7 = 5$

16) In the given figure $AD = BC$. Show that $AC = BD$ using axioms.

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├────────────┼───────┼──────────┤
A            C       D          B
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17) Two houses named A and B are located $15\ m$ apart. A water tap should be fixed equidistant to both houses. Using the knowledge of loci, indicate the places where the tap can be fixed in a sketch.

18) Simplify : $1100_{two} - 111_{two}$

19) The distance traveled in one revolutions of a wheel is 22 m. Find the radius of the wheel.

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

Paper II

- **Answer six questions only.**
- Each question carries 10 marks.
- Write the answers for Paper II on another paper and attach it to the Paper I.

1) (a) i. A car is traveling 36 km at a uniform speed on a highway in 12 minutes. Find the distance travel in 30 minutes by the car with same uniform speed. (02 m)

   ii. Narada, who works in America, pays monthly 200 American dollars to his mother in Sri Lanka. Mother goes to the bank and exchanges the money into Rupees. How many Rupees can she get if one American dollar is 340 Sri Lankan rupees? (02 m)

(b) i. Write the number 4.321×10^{-2} in general form.

   ii. The number 45.549, round off to the nearest. (02 m)

   a. Whole number (02 m)

   b. First decimal place (02 m)

2) (a) The length, breadth and height of a swimming pool are 60 m, 30 m and 2 m respectively.

   i. Find the capacity of the swimming pool in liters. (02 m)

   ii. The pool was completely filled with water and due to a water leak on one day; the water level had dropped by 0.5 m. How many liters of water leaked? (02 m)
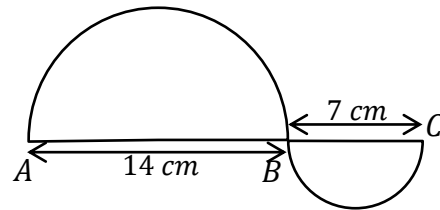
(b) Find the values of a, b, c. (03 m)
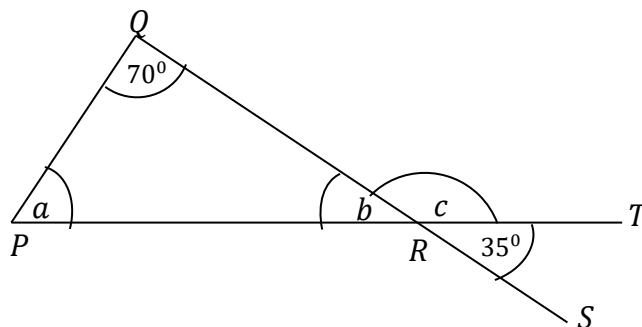
(c) According to the give information in the figure,

   i. Write the relation between $B\hat{G}H$ and $D\hat{H}G$. (01 m)

   ii. If $E\hat{G}B = 120^0$ find the value of $C\hat{H}F$. (02 m)
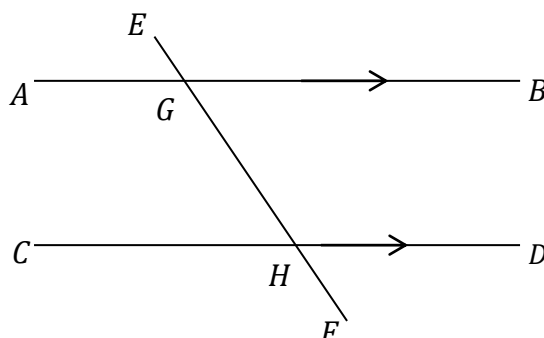
3) (a) Simplify $\frac{6x^{-3} \times x^2}{2x}$ and write the answer with positive index. (02 m)

(b) The following is a design for sewing a front of a cushion cover.

i. What is the radius of the small semi-circular portion? (01 m)
ii. Find the arc length of the large semi-circle and the arc length of the small semi-circle.

(Take $\pi = \frac{22}{7}$) (03 m)

iii. It is expected to fix ribbon around this design. Find the length of the ribbon is needed for that? (02 m)
iv. Explain with reasons that half a meter of ribbon is not enough for this. (02 m)

4) Ruwan collects 10 rupees to a till on the first day, 15 rupees on the second day, 20 rupees on the third day and so on.

i. Write the amount to be put into the till on the fourth and fifth days. (02 m)

ii. According to the pattern above, write the general term for the amount deposited on the nth day. (02 m)

iii. What is the amount put in the till on the 21st day? (03 m)

iv. 75 rupees will be deposited on which day? (03 m)

5) (a) Nimal gives $\frac{1}{2}$ of land for his son and $\frac{1}{3}$ of land for his daughter.

i. What fraction of the whole land gives for both son and daughter? (02 m)

ii. What fraction is remaining for Nimal after giving to the son and daughter? (02 m)

(b) Mahesh decides the price of a wooden table as Rs. 50 000 to make a profit of 15%. He gives a discount of 5% on when it is selling.

i. What is the price marked to sell? (02 m)

ii. What is the selling price for cash after giving the discount? (02 m)

iii. How much profit did Mahesh get from the selling the table? (02 m)

6)   i. Construct the triangle ABC such that $AB = 7cm$, $AC = 6.5cm$ and $B\hat{A}C = 60^0$.   (04 m)

ii. Construct the locus of the point which is moving equidistant to the two points B and C. (02 m)

iii. Construct the angle bisector of $A\hat{C}B$.   (02 m)

iv. Name the meeting point of the above construction lines (ii) and (iii) as O.   (01 m)

v. Construct a circle by taking the centre as O and the radius as OB.   (01 m)

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7) (a) Express the following as the product of two factors.
     i. $x^2 + xy - 4x - 4y$ (02 m)
     ii. $1 - 4p^2$ (03 m)
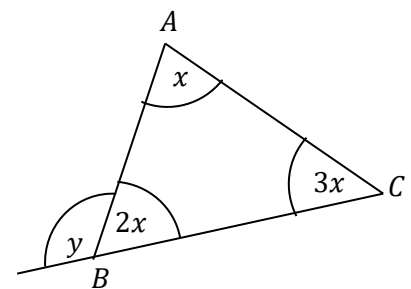
(b) Solve the following pair of simultaneous equations.   (05 m)
$$2x + y = 5$$
$$x + y = 4$$

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8) (a) Using the given information in the triangle ABC,

    i.   Find the value of x.   (02 m)
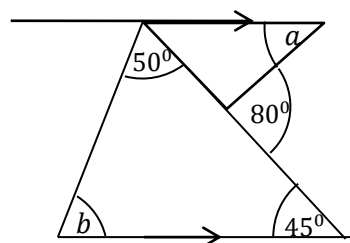   ii. Find the value of $2x$.   (02 m)
    iii. Hence obtained the value of y.   (02 m)

(b) Find the value of the angles a and b.   (04 m)