දෙවන වාර ඇගයී ම – 2017
இரண்டாம் தவணை மதிப்பீடு – 2017
Second Term Evaluation – 2017

| 9 ශ්‍රේණිය
தரம் 9
Grade 9 | ගණිතය
கணிதம்
Mathematics | පැය දෙකයි
இரண்டு மணித்தியாலங்கள்
Two Hours |

Name/Index No : ....

PART I

- *Answer **all questions** on this paper itself.*
- *Each question gets 2 marks.*

1. Round off 3.752 to one decimal place.

2. Write 6.7×10^{-2} in general form.

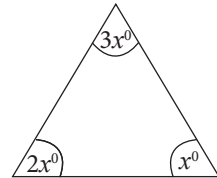3. Find the general term of the number pattern 3, 8, 13, 18, ...

4. Simplify $2\frac{1}{3} \div (\frac{2}{3} - \frac{1}{5})$

5. Find the value of $6x - 3y$ if $x = 2$, $y = \frac{3}{5}$

6. Simplify $3x \times x^3$

7. Factorize $x^2 - 4x - 5$

8. Find the value of x in the given diagram.

9. Simplify the following binomial expression.

$(x - 3)(x + 2)$

10. The cost of production of an article is Rs. 500 and sold it at Rs. 400, find the percentage loss obtained by selling each article.

11. Sachi calculated the percentage of $\frac{4}{5}$ using a calculator. The keys that he used is given below in order. But the symbols of some keys were erassed, write the missing symbols in relevant box.

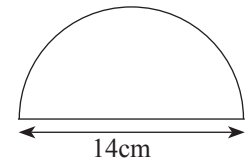| ON | | 4 | | ...... | | 5 | | ...... | | |

12. Represent in index form of $\log_3 81 = 4$

13. Using the information given in the figure. Find the value of x.
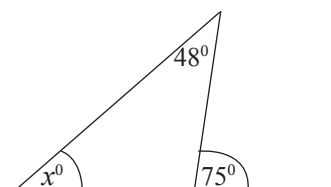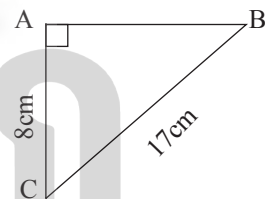
14. Solve $\dfrac{x}{3} - 4 = 1$

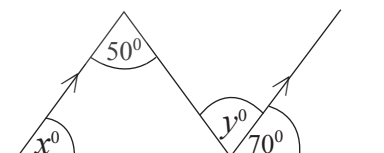15. The figure shows a semi circle, find the perimeter of it.

14cm

16. Make f the subject of the formula

    v = u + ft

17. Find the length of AB the figure according to the given data.

A, B
8cm
17cm
C

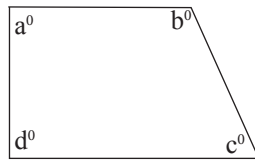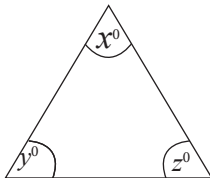18. Find the value of x and y in the given diagram.

50^0
y^0
70^0
x^0

19. Find the gradient and the intercept of the graph of the equation y = 2x− 3

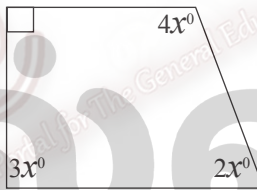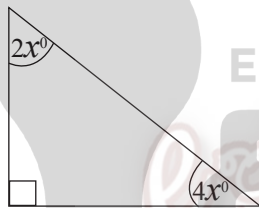20. The capacity of a vessel is 3m³ Find in liters.

PART II

1. a) Recollect the activity that you have done with the assistance of your mathematics teacher, regarding the angles of triangles and quadrilaterals.

   i) What are the values of $x + y + z$ and $a + b + c + d$?

   ii) Write the ratio

   $(x^0 + y^0 + z^0) : (a^0 + b^0 + c^0 + d^0)$ in its simple form

   iii) According to the figures find the value of x.

   b) i) A train covers 60km in one hour. Find the time the train takes to travel 420 km.

   ii) A train takes Rs. 100 to travel 120km. Find the cost the train takes to travel 420 km.

   c) i) Solve $5(x - 3) = -2 + 3(x + 1)$

   ii) Solve the pairs of simultaneous equations given below and find the value of x and y.

   $4x - 3y = -2$

   $x - 3y = -5$

2. a) Find the factors of the following algebraic expressions.

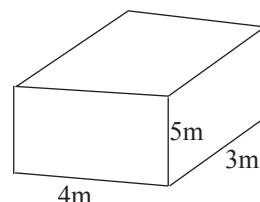   i) $4x^2 - 100y^2$ ii) $x^2 - y^2 - x + y$

   iii) $4 - 3x - x^2$ iv) $kx - my - ky + mx$

   b) Express in

   i) cubic centimeters   ii) litres

   the capacity of the following container.

3. a) Simplify $(4\frac{1}{5} \div \frac{14}{15}) \times 4\frac{1}{3}$

   b) Mr. Silva made a cash donation to a community centre $\frac{2}{7}$ of the total amount he denoted was used to buy musical instruments and $\frac{1}{2}$ to buy sports equipment.

      i) Find what fraction of the total amount was used to buy the musical instruments and sports equipment.

      ii) The amount reaming was used to buy books. Find what fraction of the total amount was used to buy books.

4. a) Simplify

      i) $\dfrac{x^3 \times 2y^{-4}}{x^{-2} \times y^{-5}}$ ii) $\dfrac{(x^3)^2 \times x^5}{x^4}$

      iii) $\log_x 125 = y$ write one suitable pair of numbers for x and y.

   b) A person who borrowed Rs. 40 000 at 10% annual simple interest pays back the loan with the interest after 3 years

      i) Find the interest after 3 years.

      ii) What is the amount he has to pay to get released from the loan?

5. Use only a straight edge with a cm/mm scale and a pair of compasses for the following constructions show the construction lines clearly.

   i) construct the straight line segment AB which is 7.5cm long. Construct an angle $B\hat{A}C = 60^0$

   ii) Construct the straight line segment AC and mark the point C on the straight line segment which is 6cm away from A.

   iii) Complete the triangle ABC.

   iv) Construct the locus of the point which moves equidistant from AB and AC Mark the point D where the locus meet BC.

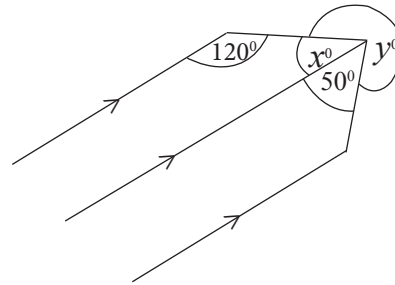6. a) Find the perimeter of the following shapes shown in the diagrams.

      i)
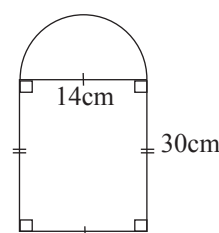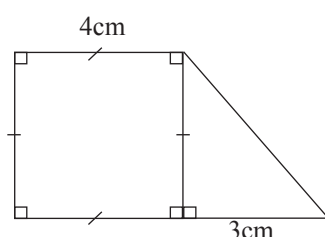
b) Find the value of *x* and y according to the data given in the figures.

i)
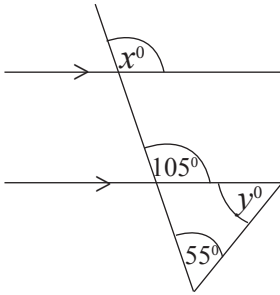
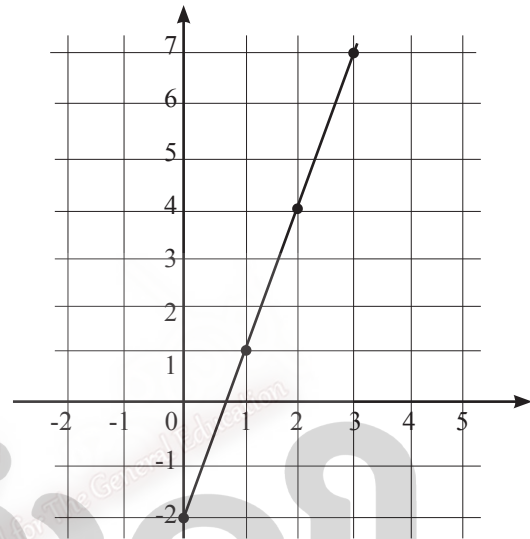

ii)

7. a) In the given graph of the straight line

    i)   What is the intercept

    ii)   Find the gradient

    iii) Using the gradient and the intercept
          write the equation of the straight line

    b) Find

        i) the gradient

        ii) the intercept and the equation of the straight line that joins the points (1, -3) and (2, -1)