



PROVINCIAL DEPARTMENT OF EDUCATION - NORTH WESTERN PROVINCE

## SECOND TERM TEST 2019

Grade 09

## MATHEMATICS

2½ hours

Name / Index No. :

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### PART - I

- Answer the questions from 01 - 20 on the paper itself.
- Each question in part - I carries 02 marks.

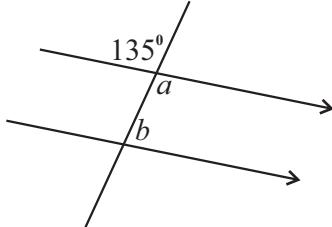
01. Simplify,  $0.31 \times 0.2$

02. Population of a certain city is 752800. Write the number in scientific notation.

03. Round off 5.24539,

- (i) to the nearest whole number.
- (ii) to the nearest second decimal place.

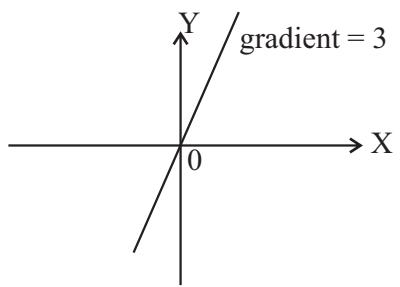
04. Find the values of  $a$  and  $b$  according to the given information.



05. Make  $a$  the subject of the formula,  $v = u + at$

06. Simplify and express with positive indices. 
$$\frac{x^2 \times x^{-4}}{x}$$

07. Write the equation of the function of the graph given.



08. Fill in the blanks with suitable key values, to obtain the value of  $\sqrt{64}$ , using the scientific calculator.

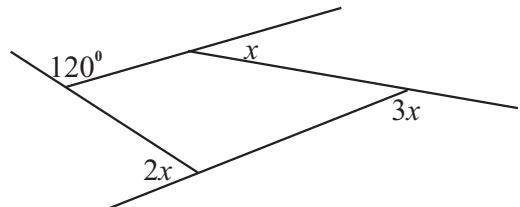
$\longrightarrow$    $\sqrt{ }$   $\longrightarrow$    $\longrightarrow$    $\longrightarrow$   $=$

09. Represent 57 as a binary number.

10. Construct  $\hat{PQR} = 90^\circ$

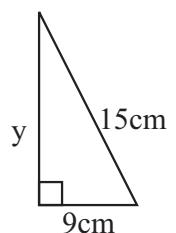


11. Find the value of  $x$ .



12. Write the general term of the number pattern 35, 32, 29, 26, .....

13. Find the value of  $y$ .

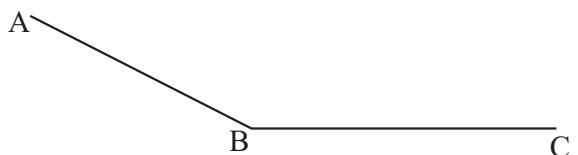


14. Solve the equation.

$$\frac{x}{7} - 8 = 2$$

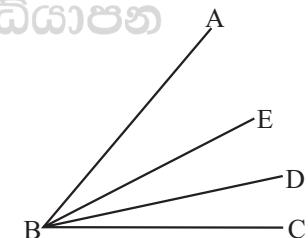
15.  $\frac{2}{5}$  of 300 mangoes were spoilt and  $\frac{1}{3}$  of the remaining were sold. Find the number of sold mangoes.

16. Construct the angle bisector of  $\hat{ABC}$ .

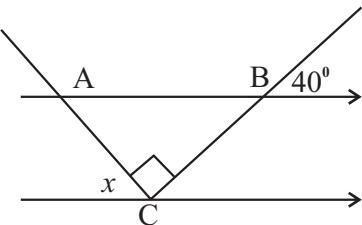


17. When  $x = \frac{1}{2}$  and  $y = -\frac{1}{3}$ , find the value of  $4x + 6y$

18. If  $\hat{ABE} = \hat{CBD}$  show that  $\hat{ABD} = \hat{CBE}$ .



19. Find the value of  $x$ .

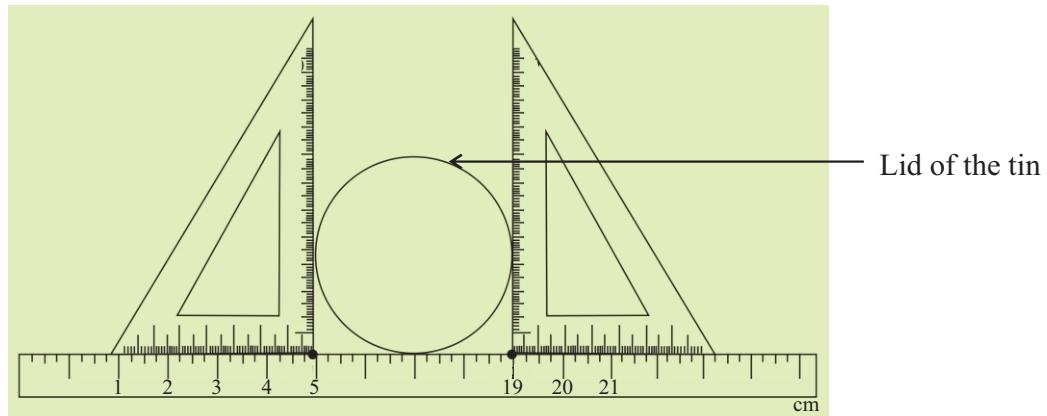


20. Factorize  $3p^2 - 75$

## PART - II

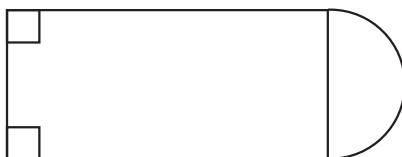
- Answer the 1<sup>st</sup> question and 04 other questions.
- The first question carries 16 marks and all the other questions carry 11 marks each.

01. Following is a sketch of an activity done by grade 9 students.



- (i) What is the purpose of this activity? (02 marks)
- (ii) What is the value of the measurement obtained? (02 marks)
- (iii) If a thread is wound stretchly around the above lid **once**, what is the measurement denoted by the length of this thread. (01 mark)
- (iv) Calculate the value of the measurement given in (iii) (04 marks)
- (v) The above lid was separated into two equal parts and a rectangular lamina was joined along the cutting edge of one of the part as shown below.

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- (a) Find the width of the rectangular lamina. (02 marks)
- (b) Find the perimeter of the combined lamina. (05 marks)

02. (i) Find the factors of  $x^2 - x - 20$  (03 marks)

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

(iii) Solve the following simultaneous equations. (05 marks)

$$a - 3b = 13$$

$$-a + b = -7$$

03. Use only a straight edge with a cm/mm scale and a pair of compasses to do the following constructions. Draw your construction lines clearly.

- Draw a straight line segment  $AB = 8\text{cm}$ . (01 mark)
- Construct,  $\hat{A}BC = 60^\circ$  (02 marks)
- Mark C such that  $AC = 7\text{cm}$ . (01 mark)
- Construct a perpendicular to AB from C. (03 marks)
- Name the point of intersection of the perpendicular and line AB as D. (01 mark)
- Construct a parallel line to AB though C. (03 marks)

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04. An incomplete table of values prepared to draw the graph of the function  $y = -3x + 1$  given below.

x	-2	-1	0	1	2
y	7	....	1	....	-5

- Fill in the blanks of the above table. (02 marks)
- Draw the graph of the above function. (03 marks)
- Find the gradient and the intercept of the function. (02 marks)
- Draw the graph parallel to above graph and passes through  $(0, -3)$  on the same coordinate plane. (02 marks)
- What is the requirement that should be satisfied to two graphs to be parallel. (02 marks)

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05. (a) Sujeewa expect to sell his land of 20 perches, for Rs. 80000 each perch. He agreed to pay a commission of 4% to find a buyer. According to the request of the buyer he agreed to give a discount of 1%. Finally Sujeewa received Rs. 1 520 000.00 by selling the land.

- What is the expected amount of money by selling the land. (02 marks)
- How much is needed to pay as the commission? (02 marks)
- What is the discount? (02 marks)

(b) A vendor incurs a loss 5% by selling a mobile phone to Rs. 19000.00.

- Find his buying price (03 marks)
- Find the loss incurred (02 marks)

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06. (a) Simplify,

(i)  $2 \frac{1}{3} \times 1 \frac{5}{7}$  (02 marks)

(ii)  $2 \frac{2}{3} + 3 \frac{1}{5} \div 1 \frac{3}{5}$  (04 marks)

(b) Mr. Perera bought a television of Rs. 26730.00 from a duty free shop. The amount he paid for this is 150 American dollars.

(i) Find the exchange rate of an American Dollar in Sri Lankan Rupees on that day. (03 marks)

(ii) He bought a wrist watch for his daughter worth 50 American Dollars. What is the price of the wrist watch in Sri Lankan rupees. (02 marks)

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07. A cuboid shaped tank having its length, breadth and height 5m, 5m and 4m respectively is used to supply water for a housing complex. When the tank is filled, it could supply water for 250 houses per day.

(i) Find the volume of the tank. (02 marks)

(ii) Find the capacity of the tank in liters. (02 marks)

(iii) Find the amount of water supplied to a house for daily consumption? (03 marks)

(iv) If the urban council of this area, earns 20 cents per liter, what is the total income it earns from housing complex in a month having 30 days by supplying water. (04 marks)

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