**Grade** 9

## SECOND TERM TEST - 2019

SUBJECT - **Mathematics**

School : .......................................................................................

Name of the Student/ Index No : ...............................................
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Time : **2** hrs.

| Part I |
|---|

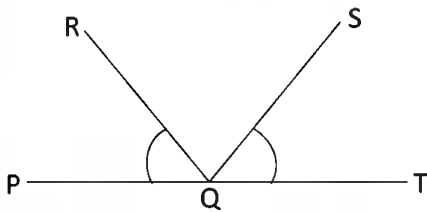❖ **Answer all the questions.**

(01) How many liters are there in $\frac{3}{4}$ of $800l$ of water?

(02) Write in general form. $4.3 \times 10^{-4}$

(03) The radins of a semicircle of which the perimeter is $7\ cm$, is $36cm$ . Find the arc length.
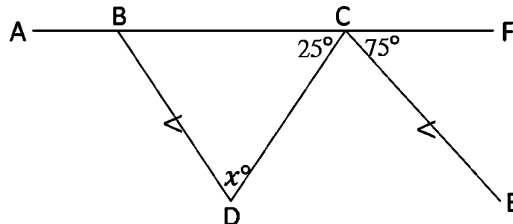
(04) Solve $\frac{x-5}{4} = 10$

(05) If $P\hat{Q}R = S\hat{Q}T$ in the given figure, name an angle equal to $P\hat{Q}S$ .



(06) Find the volume of water that is needed to fill a container completely with the volume of $200\ cm^3$.

(07) The cost of 8 water bottles is Rs. 240. Find the cost of three such water bottles.
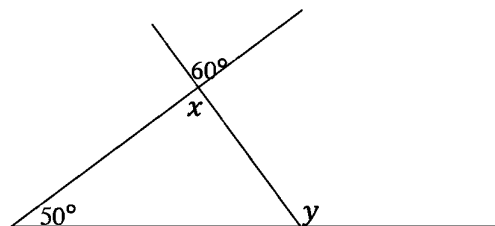
(08) Find the value of $x$ using the given information.



(09) If $(x-3)(x+5) = x^2 + bx - 15$ find the value of $b$
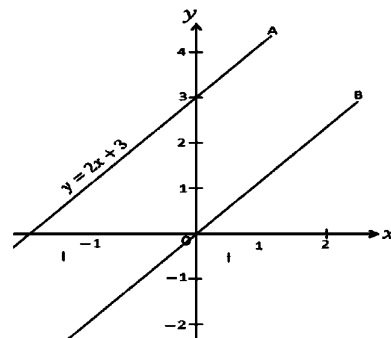
(10) Write $\dfrac{1}{4^{-3}}$ in positive index.

(11) Make $d$ as the subject of the formula $l = a + 4d$

(12) In the given figure,

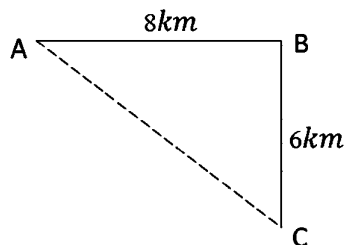    i.    Find $x$
   ii.    Find $y$



(13) Write the equation of straight line B if the A and B are parallel in the given figure.
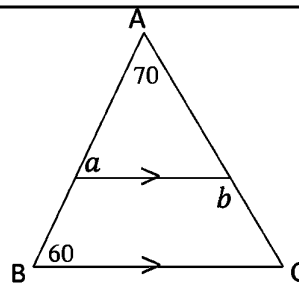
(14) The ratio of the interior angles is 1:2:3. Find the magnitude of the smallest angle.
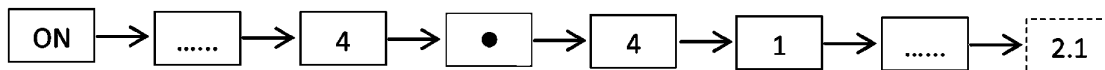
(15) Town A is located $8Km$ West to the town B. The town C is located $6Km$ South to B. Find the shortest distance between A and C.

A ----- 8km ----- B
                   6km
                   C

(16) Find the magnitude of angles $a$ and $b$ .

A
70
$a$
$b$
B  60    C

(17) Following keys of a calculator shows the order of pressing them to get the value of $\sqrt{4.41}$. Complete the blanks.

ON → ...... → 4 → ● → 4 → 1 → ...... → 2.1

(18) Find the factors of   $x(x + 2) - 3x - 6$

(19) When selling an item, if the payment is done outright, a discount of 13% is offered to the customer. Yasiru bought an item for Rs. 2000 for ontright payment. Find the discount he got.
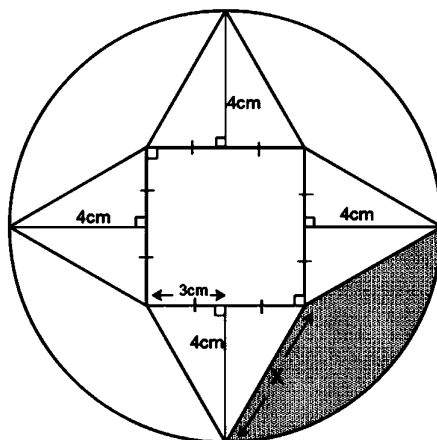
(20) $AO$ and $BO$ are two straight roads and they are met at $O$. Construct the locus which is eqnidistance to $AO$ and $BO$

A
O
B
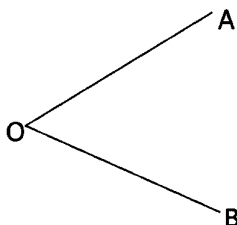
| Part II |
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| **Answer only 5 questions including the question No. 01** |

(01)



The above figure shows a symbol that was drawn by using geometrical shapes.

i. Name two shapes in the figure. (02 marks)

ii. Find the diameter of the circular lamina that is used to make the symbol. (01 mark)

iii. Find the circumference of the above circle. ( 03 marks)

iv. Find the arc length of the shaded region. (02 marks)

v. Find the length denoted by "$x$" ( 02 marks)

vi. What is the special name of the theorem which is used to find $x$ ? (01 mark)

vii. Find the perimeter of the shaded region. (02 marks)

viii. Isuru expressed that it is sufficient 10 papers (A3 size) of which length is $42cm$ and the breadth is $29.7cm$ to create 65 such symbols. Explain whether it is true or false giving reasons. (03 marks)

(02) Of the number pattern 5,8,11,14.......................

a. i. Find the common difference. ( 01 mark)

   ii. Find the general ($n^{th}$ term) term. ( 02 marks)

   iii. Show that $6^{th}$ term is four times of the first term. ( 03 marks)

b. i. $12_{10}$ write as a binary number. ( 02 marks)

ii. Simplify the following and write the answer in decimal number. $11_2 + 101_2 - 110_2$. ( 03 marks)

(03) a). Zahira, who works in Sandi Arabia, has an idea to buy a mobile phone when she comes back to Sri Lanka. It costs 900 Riyal in Saudi Arabia. But she got to know that she could buy it for Rs. 37000 in Sri Lanka.( I0 Riyal=SLR 403.20) Write whether it is cheaper to bny the phone in Arabia or Sri Lanka. Give reasons (06 marks)

b). Simplify $\dfrac{(x^2)^{-1}\times(2xy^2)^3}{8xy^6}$ ( 5 marks)

(04) i. Construct the triangle $A\hat{B}C$ snch that $AB = 8cm,\ BC = 6cm,\ A\hat{B}C = 90°$ (04 marks)

ii. Join $A\ and C$. Measure the angle $A\hat{C}B$ and write the valne. (02 marks)

iii. Construct the perpendicular bisector of $AC$ and name the point where $AC$ is intersected by the perpendicular as $O$ (03 marks)

iv. Construct a circle taking the centre $O$ and the radius $OA$ . Measure the radins of it. (02 marks)
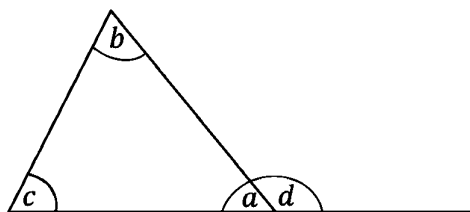
(05) i. if $x = 3$ and $y = -1$ , fmd the valne of the algebraic expression $2x + y$ (03 marks)

ii. Solve the equation $\dfrac{(x+1)}{2} - \dfrac{(x+2)}{3} = \dfrac{1}{6}$ (04 marks)
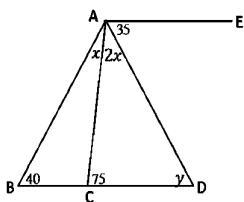
iii. Find the valne of $x$ and $y$ solving the eqnations $x + y = 7$ and $2x - y = 8$ (04 marks)

(06) a) Fill in the blanks using the given information of the figure.

$(a + d) = $ .................................(angles of the straight line (0I mark)
$c + b + a = $ .................................... (02 marks)
....................... + .............................. $= c + b + a$ (0I mark)
$a + d - a = c + b + a - a$
.................................... $= c + b$ (01 mark)



b) Write the answers for the given qnestions according to the figure.



i. Find $x$ (02 marks)

ii. Find $y$ (02 marks)

iii. Kaveesha said that $BD$ and $AE$ were parallel. Explain whether it is true or false giving reasons. (02 marks)