SOUTHERN PROVINCIAL DEPARTMENT OF EDUCATION

MID YEAR TEST - 2019

GRADE 9

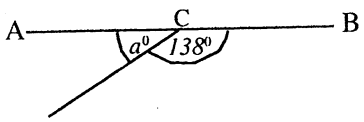
MATHEMATICS

Name/ Index No :- ..... **Time : 2 Hours**

Part I

- **Answer all the questions in this paper itself.**

(1) AB is a straight line. Find the value of a^0.

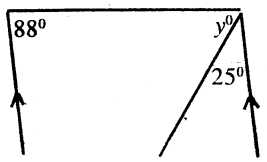


(2) Price of 3 m of fabric is Rs. 750. Find the price of 11m of fabric.

(3) 5 : 3 = 40 : ☐ Fill in the blank.

(4) 1 Japanese Yen = 1.72 Sri Lankan Rupees. Find the price of the television in Sri Lankan Rupees if the price of it is 12 500 Japanese Yen.

(5)



Find the value of y^0

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(6) $5a^3 \times 2b^2 \times 3a^{-} \times 7b^5$ Simplify.

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(7) Total surface area of the earth is 510100000 Write down it in scientific notation.

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(8) Simplify $\frac{x^{-2} \times x^{-4} \times x^6}{y^{-2} \times y^8 \times y^{-6}}$.

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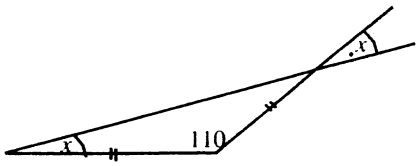
(9) Capacity of a container is $5l$. How many times we must pour water using a cup of capacity $50\ ml$ to fill $\frac{1}{2}$ of that container.

(10) Solve $\frac{x-3}{2} - 1 = 5$.

(11)



Find the value of x^0.

(12) Solve $x - y = 2$

$x + y = 8$.

(13) Construct a 30^0 angle using the pair of compasses.

(14) 10001_{two}
$- \ 111_{two}$
Simplify.

(15) Simplify $1\frac{4}{5}$ of $\frac{5}{9}$.

(16) Rs. 3 000 worth item is sold out for Rs. 2 250 due to a damage. Find the loss percentage.

(17) Factorize $ax - 8a + 3x - 24$.

(18) Find the general term (T_n) of the number pattern 15, 19, 23, 27, ...

(19) Solve $6\{3(x + 2) - 2(x - 1)\} = 72$.

(20) Round off the numbers of 459.7×3.51 to the nearest whole number and find the value.

Part II

Write down the answers for only 5 questions.

(1) Length, breadth and height of a water tank in a house is 3 m, 2 m and 1.5 m respectively.

(i) Find the capacity of the water tank in litres.

(ii) For a day a person needs 150l of water. Find the amount of water in l need for a family with 4 members for a day.

(iii) For how many days the water in the tank is sufficient for this family.

(iv) 100l of water flows out from a pipe within a minute. Find the time taken to fill this tank completely using this pipe.

(v) When water tank is filled completely, due to a damage in the pipe 1500l of water wasted. Find the height of the remaining water level in the tank.

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(2) Use the ruler and the pair of compasses to do the below coustructions.

(i) Draw a circle of radius 5 cm and name its centre as O.

(ii) Mark the points P and Q on the circle which is 8 cm away each other and draw the line PQ.

(iii) Construct a perpendicular line to PQ from O. Name the intersection point of PQ and the perpendicular line as N.

(iv) Measure AN and BN and write their lengths.

(v) Measure ON and write the length.

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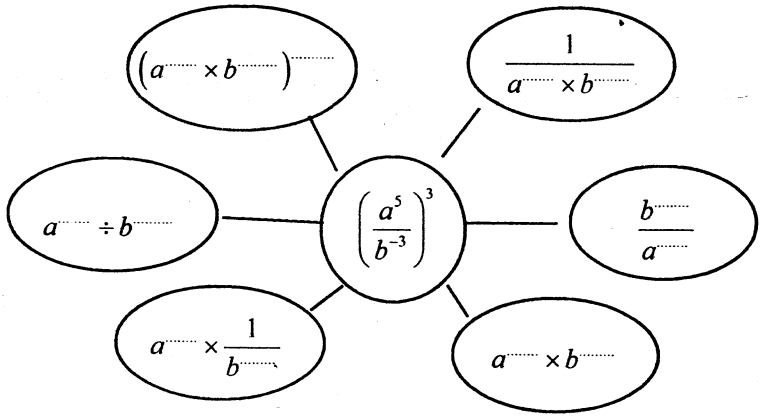
(3) (a) Copy this figure in your answer sheet and fill in the blanks.



(b) Price of a dozen of eggs is Rs 207. Find the price of 50 eggs.

(c) Price of 1l of petrol is Rs.135. A bicycle can travel 180 Km by using 4l of petrol. Find the cost of petrol that needs to travel 495 Km by that bicycle.

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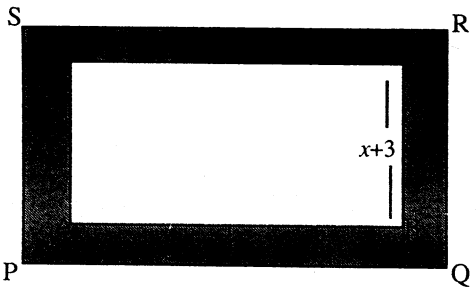
(4)



ABCD is a rectangular wall hanger. Length of it is $(2x+5)$ cm and breadth is $(x + 3)$ cm.

(i) Find the area of ABCD in terms of x.

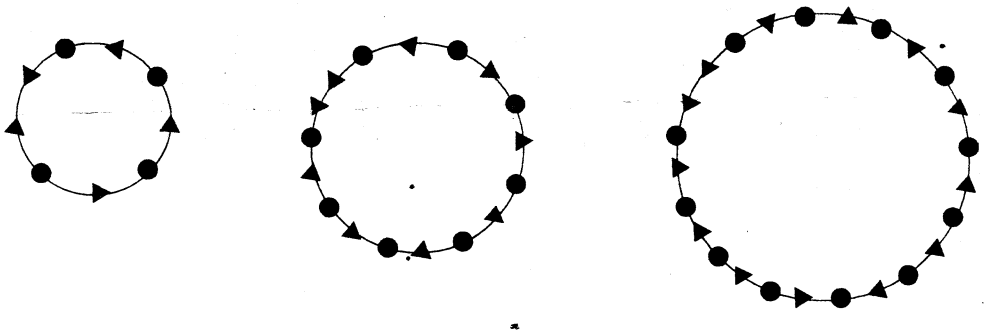
(ii) Shaded region represents a frame around the wall hanger which is x cm width. Find the area of PQRS rectangle.

(iii) Find the area of the shaded region (frame).

(iv) If x = 10cm find the area of the shaded (frame) region in cm^2.

(v) The cost of 1 cm^2 of the frame is Rs. 5. Find the cost of the frame.

(5)



(i) Write down the number of ▲ and ● in the 4th pattern using the given patterns. (without drawing the pattern.)

(ii) Write down expressions seperately for the number of ▲ and ● in then nth pattern.

(iii) Find the total of the ▲ and ● in the nth pattern.

(iv) Find the number of ▲ and ● seperately in the 20th pattern.

(v) The sum of ▲ and ● in a pattern is is 121. Find the number of ▲ in that pattern.

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(6) Cost of 2 books and a pen is Rs. 400. Cost of 3 pens and 2 books is Rs. 600.

(i) Taking the price of a book as Rs. a and a pen as Rs. b builds up a pair of simultaneous equations.

(ii) Solve the pair of simultaneous equations and find the price of a book and a pen.

(iii) Madawa said that the maximum number of pens and books which can buy using Rs. 1000 are equal. Are you agree or disagree with that statement? Give reasons.

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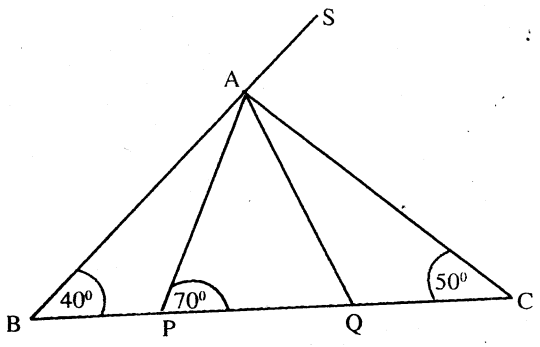
(7) ABC is a triangle. P and Q points are located on the side BC such that $B\hat{A}P = C\hat{A}Q$ and BA is produced to S.



(i) Find the value of $B\hat{A}P$.

(ii) Find the value of $S\hat{A}C$.

(iii) Find the value of $A\hat{Q}C$.

(iv) Find the value of $A\hat{Q}P$.

(v) Find the value of $S\hat{A}Q$.

(vi) Show that $P\hat{A}Q = \frac{1}{3}S\hat{A}C$.