

Kegalle Education Zone

Final Term Test - 2019

Grade -9

Mathematics

Time : Two and Half hour

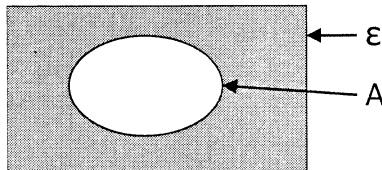
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Part A

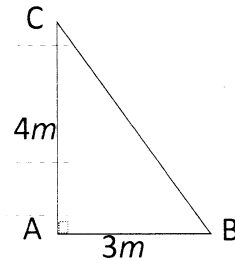
• Answer all questions

01) Write down the next two terms of the number sequence 3, 7, 11, 15

02) Write the shaded region of the following Venn diagram in set notation.



03) A ladder BC which was leaned to the horizontal floor AB and vertical wall AC is shown in the figure. Find the length of the ladder.



04) Simplify and write the answer with positive index. $a^2 \times a^{-3}$

05) Simplify $101_{\text{two}} + 110_{\text{two}}$

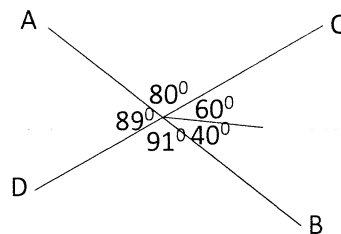
06) Make "u" the subject of the formulae $v = u + at$

07) Find the factors of $2x + 4$

08) An unbiased die, marked its faces from 1 to 6, is tossed and observe the number turns up. Write the sample space that consists of all possible outcomes.

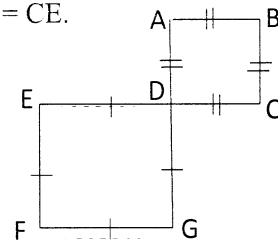
09) Simplify $\frac{7}{9}$ of $\frac{3}{2}$

10) According to the information in the figure, name a straight line segment.

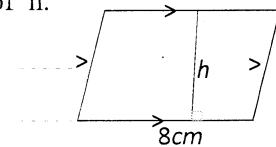


11) Term test marks obtained by a student is given below. 28, 45, 34, 69, 57, 80, 49, 91, 60, 73
What is the median of the marks.

12) According to the given information in the diagram show that $AG = CE$.

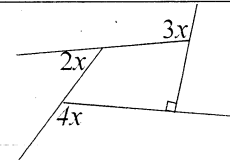


13) If the area of the parallelogram in the figure is 40cm^2 , find the value of h .



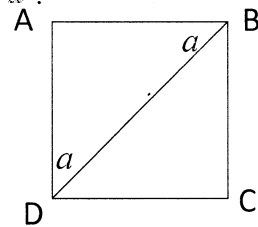
14) When a wheel of the bicycle complete the one full rotation, the bicycle moves 176cm distance. Find the radius of the wheel.

15) Find the value of x using the information given in the figure.



16) "It is expected to increase the number of children who receive the grade 5 sholership up to 20000 from this year" Write the above number in scientific notation.

17) In the square ABCD given below, BD is a diagonal. Find the value of "a".



18) Capacity of the cuboid shaped tank is 600cm^3 and the area of its base is 40cm^2 . Find the height of this tank.

19) A discount of Rs. 480 is offered when selling a wrist watch of the marked price Rs. 2800. Find the selling price of it.

20) If $x^2 + 5x + 6 = (x + a)(x + b)$ write the values of a and b .

Part B

• **Answer 6 questions only. • Each questions carries 10 marks.**

01)(a) Kamal spends $\frac{1}{6}$ for education of his monthly income for food and $\frac{3}{8}$ for education of his children.

(i) Find the money he has spent for the food and education of his children as a fraction of the total income.

(ii) After the above expenses, express the remaining amount of money as a fraction of the total income.

(iii) If the amount of money he remained is Rs.22 000, find his monthly income.

(b) Which one is more profitable business between "selling an item for Rs.75 which is bought at Rs.60 and selling at item for Rs.60 which is bought at Rs.50 ? Explain the answer with reasons.

02) (a)(i) Solve. $\frac{x-1}{3} = 8$

(ii) Sum of the ages Priyantha and Ajith is 37 years. Difference of their ages is 5 years.

Taking the age of Priyantha as x and age of Ajith as y , construct a pair of simultaneous equations and solve them and find their ages separately.

(b) The information collected in a survey about the number of children of each of the families of 30 families in a certain village is shown in the table below

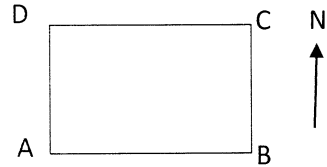
Number of children	0	1	2	3	4	5
Number of families	4	8	9	4	3	2

Find the mean number of children of a family.

03) (a) A circular pond with radius $7m$ is made in a rectangular garden of length $80m$ and breadth $50m$.

- (i) Find the area of the pond.
- (ii) write a suitable scale to draw a scale diagram of the above garden.
- (iii) Draw a scale diagram of the garden using the above scale. (without the pond)

(b) If the bearing of the center of the pond from A is 040° and it is located a distance of $20m$ from A. Name the location of that center as O in the scale diagram.



04) (a) Simplify

(i) $\frac{3^8 \times 3^{-2}}{(3^2)^2}$

(ii) $7^0 \times 7^5 \times 7^{-2}$

(b) The number 3.741

- (i) Round off to the nearest first decimal place.
- (ii) Round off to the nearest whole number.

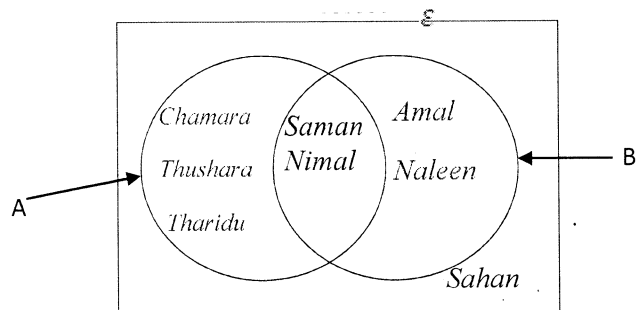
(c) A three wheeler travels a distance of $75 km$ of $3l$. How many liters are required to travel a distance of $125 km$?

05) (a) There are 8 identical balls in a box. 3 balls are red and 2 balls are blue and the rest of the balls are white. A ball is randomly taken out and its colour is noted. Find the probability each of the following events.

- (i) Taking a red ball
- (ii) Taking a blue ball
- (iii) Taking a red or blue ball

(b) Write down the elements of the following sets using the Venn diagram given below.

- (i) $A \cap B$
- (ii) $(A \cup B)'$



- 06) (a) i. Solve the inequality, $3x > 9$ and write down two integral solutions that satisfied the inequality.
 ii. Find the factors $x^2 - 6x$
- (b) An incomplete table of values prepared to draw the graph of the function $y = -2x + 1$ is shown below.

x	-2	-1	0	1	2
y	5	1	-1	-3

- i. Find the value of y when $x = -1$
 ii. Draw the graph on a suitable Cartesian plane.
 iii. Write the equation of the straight line which passes through the point $(0,2)$ and parallel to the graph drawn above.

- 07) Do the following constructions using a straight edge and a pair of compasses only.
- Construct the line segment such that $AB = 6.5 \text{ cm}$.
 - Construct the angle such that $\hat{ABC} = 120^\circ$.
 - Construct the angle bisector of \hat{ABC} .
 - Construct the locus of a point equidistant to the points A and B, and mark the point it meets the locus above (iii) as D.
 - Construct a circle with center D and by taking the shortest distance from D to AB as a radius.

- 08) In the given figure, $PQRST$ is a pentagon and PTU is one of the exterior angles of it.
- (i) Find the sum of the exterior angles of a pentagon.
 - (ii) Find the magnitude of x .
 - (iii) Construct an equation to find the value of y by using the interior angles of the pentagon.
 - (iv) Solve the equation and find the value of y .

- (b) The magnitude of an interior angle of a regular polygon is 140° . Find the number of sides it.

