TH1RD TERM TEST - 2018

Mathematics

Grade
9

School : ....

Name of the Student/ Index No : ....
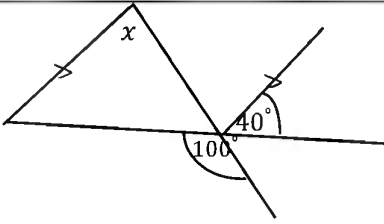
Time: 2 ½ hrs.

| Part I |
|---|
| Answer all the questions on the paper itself. |
| 1) Convert this binary number into base ten number. 11011_{Two} |
| 2) Find the factors of $9x^2 - 4$. |
| 3) *find the value of x* |
| 4) A 350ml amount of water has been wasted in 5 minutes due to a leakage of a tap. What is the amount of water wasted in an hour in milliliters? |
| 5) What is the capacity of a cubed shaped container that can be prepared using the given net? |
| 6) Find the length of AB |
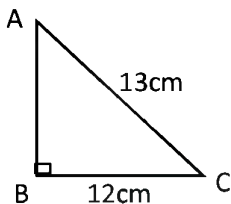
7) Simplify $3x \times 2x^2$

8) Convert this number into the general form 4.32×10^{-3}
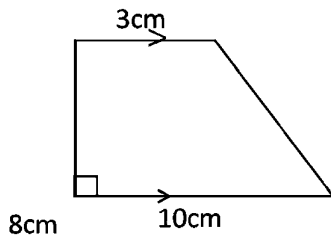
9) *Find the value of x .*
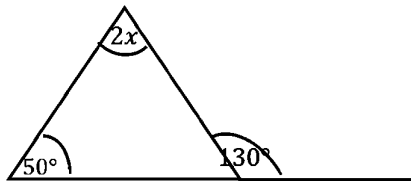
10) Make "a" the subject of the formula $\frac{a+b}{2} = x$.

11) $5 + x \leq 8$, Solve this inequality and represent the solution set on the number line.

12) Find the circumference of the circle with $21 cm$ radius.

13) The distance between two cities of a map is 8cm drawn to the scale of 1:1000 000. Find the real distance between the two cities.
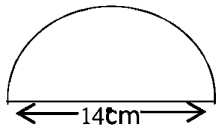
14)

3cm

8cm   10cm

Find the area of this trapezium

15) The general term of a number pattern is $40 - 7n$. Find its 6th term.

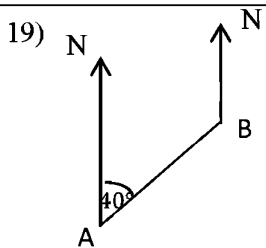16) The magnitude of an interior angle of a regular polygon is $108°$.

    I.   Find the magnitude of an exterior angle
    11.   Find the number of sides.

17)

14cm

Find the arc length of the given semi circular lamina

18) Simplify $\frac{3x+5}{4} - \frac{x}{4}$.

19) N   N

               B

If the bearing of B from A is $040°$ write the bearing of A from B

40°

A

20) Draw a sketch of the locus of a point which are in equal distance from both AB and BC lines.

A

B ——————— C

Part II

Answer 5 qnestions inclnding the question 1.

1) a) ε = { counting numbers from 1 to 10}

A = { composite numbers below 10}

B = { square numbers between 1 and 10}

    I.   Write each of the above sets in terms of its elements.   (03 marks)

   II.   Represent the elements of eaeh set in a Venn diagram.   (03 marks)
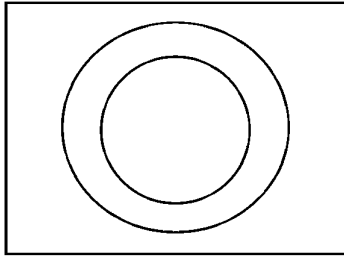
    According to the Venn diagram,

    III.   *Write the elements of A ∩ B*   (02 marks)

    IV.   Write $n(A^{/})$ (01mark)

    V.   If the above set B= { square numbers from 1 to 10}, draw the Venn diagram that should be changed with its elements.   (03 marks)

b) Randomly taken a pen from a box with 3 red pens and 4 blue pens in the same quality.

    I.   Write the sample space of the above experiment.   (02 marks)

   II.   Find the probability of taking a red pen.   (2marks)

2) Following data shows the number of flower plants sold in a plant nursery during 25 days.

```
13  21  31  41  54
11  23  25  30  32
43  45  51  46  48
14  29  37  40  35
34  55  38  36  42
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    I.   Build a frequency distribution for the above data taking the elass intervals 10-20, 21-30   (02 marks)

    II.   Find the range of the above data.   (05 marks)

    III.   What is the size of the class intervals?   (01 marks)

    IV.   What is the Mode?   (01 mark)

    V.   Find the median class.   (2 marks)
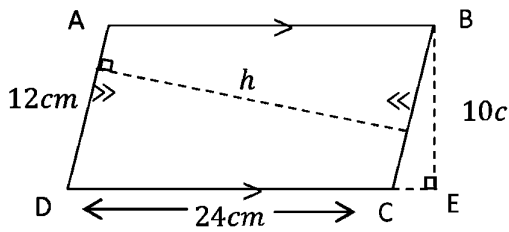
a) I. Find the area of the parallelogram ABCD. (2marks)

ii. Find the value of the side denoted by "h". (2 marks)

b) Sampath proposed to make a circular pond in a rectangular land of length 30 m, breadth 50m as shown in the figure.
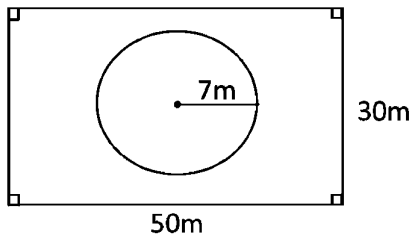
i. Find the area of the rectangular land. (2 marks)

ii. Find the area of the circular pond. (2 marks)

iii. They planned to grow grass in the remaining part except the pond. Sampath says that it would cost more than Rs. 60 000 if the cost of 1 square meter is Rs. 50. Explain whether it is true of false giving reasons. (3 marks)

4) a).Simplify $\left(\frac{1}{2}+\frac{1}{3}\right) \div \left(1\frac{5}{6}+\frac{2}{3}\right)$ (4 marks)

b).A vendor bought a shirt for Rs. 500 and marked a certain selling price. He earned a profit of 20%. When selling it 10% of discount was given to the customer.

I. What is the marked price of the shirt? (2 marks)
II. Find the price of the shirt after the discount is given. (2 marks)
III. Find the profit that the vendor earned by selling the shirt. (01 mark)
IV. Calculate the profit percentage. (1 mark)

5) l). Construct the line segment of AB=8cm
II). Construct an angle of 45° at B such that AB is an arm. (04 marks)
lII). Mark the point C such that BC=6 cm . (02 marks)
lV).Construct the angle bisector of $A\hat{B}C$, name the point as "O" where the bisector and the side AC are met.
(03marks)

V). Draw a circle of the radius is OC and the centre is O. (02 marks)

6).a) Solve the simultaneous equation $2x - y = 3$
                                               $x + y = 6$

(04marks)

b) An incomplete table of values prepared to draw the graph of the function $y = 2x - 3$ is given below.

x	-1	0	1	2	3
y	……	-3	-1	……	3

I.   Fill in the grid   (02 marks)

II.   Draw the graph of the above function.   (03marks)

III.   Write the equation of the straight line which is parallel to the above line and the intercept is +1.
        (02marks)