T/KIN/MUSLIM LADIES COLLEGE

(National School)

First Term Evaluation - 2020

Marks

Grade-10

Mathematics - I

Time – 2Hrs

Part – A

Answer all the questions on this paper it self

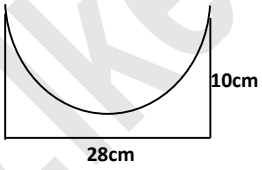
01. Find the value of $\sqrt{24}$ to the nearest first decimal place

02. Simplify: $\frac{18a^2b}{9ab^2}$

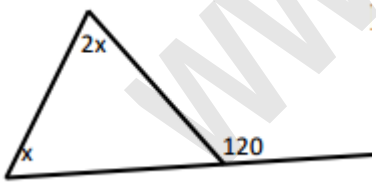
03. Solve: $4x + 1 = 9$

04. Find the value of $(2a)^2$.

05. Find the perimeter of the figure.



06. Find *x*.



07. 2 harvesting machine take 5 hours to harvest a certain paddy field. Find that how many such machines are needed to harvest twice that of paddy field in 10 hours.

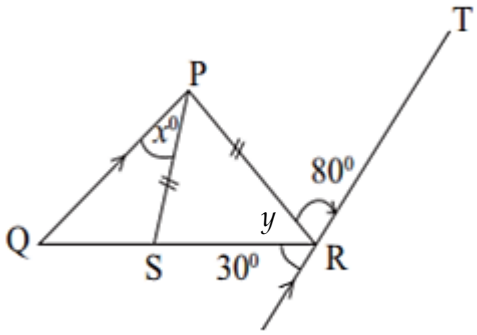
08. Find the value of $\sqrt{12.32}$ to the nearest one decimal place.

09. Find the least common multiple: a^2b, ab, abc.

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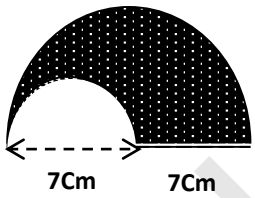
10. The total surface area of a solid cube is 360cm^2. Find the area of a face of the solid cube.

11. According to the data given in the diagram,
Find the values of x , y.



12. 6, 10, 14, 18,…. In the number pattern find the 15th term.

13. Find the area of the shaded portion:



14. Factorize: $1 - 81x^2$

15. Expand: $(2y - 1)^2$

16. Simplify: $\frac{5}{x-1} - \frac{2}{x+2}$

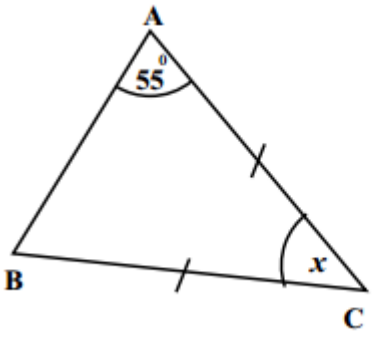
17. Simplify: $\frac{1}{4} \times \left(\frac{1}{8} + \frac{2}{5} \right)$

18. Change x as the subject of the formula $v = u + ax$.

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19. If a + b = 2 and ab = 3, find the value of $a^2 + b^2$.

20. Find the magnitude of x.

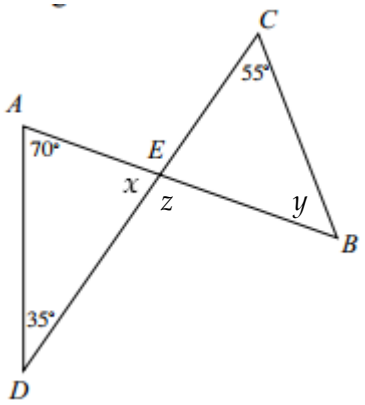


21. A father gave $\frac{1}{4}$ of the land he had to his son and $\frac{1}{2}$ to his daughter. Find the fraction of the land left over for the father as whole land.

22. Factorize: $a^2 - 4a - 21$

23. Solve and Represent the solution in a number line : $x\text{-}2 \leq 1$

24. According to the data given in the diagram,
Find the values of x, y and z



25. A water pipe should be constructed equidistance from the light posts P and Q. using the knowledge Of loci. Mark the point that the place where pipe should be constructed in a sketch.

Q

P

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Part – A

Answer all the questions on this paper it self

01) Mr.Been sold 1/3 of his land, then gave 1/4 of the remaining to his daughter. Finally he distributed the remaining portion to his two sons by dividing equally.

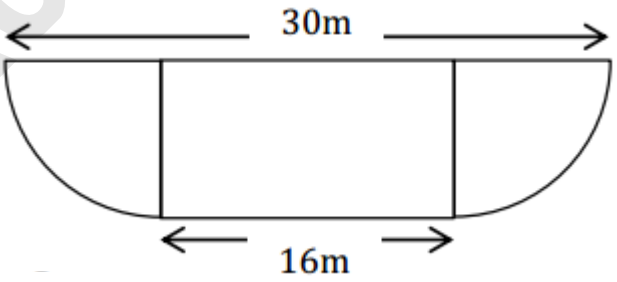
(i) Find the remaining portion of the land after selling, as a fraction of the whole land.

(ii) Find the portion of the land gave to his daughter, as a fraction of the whole land.

(iii) Find the portion of the land distributed to a son, as a fraction of the whole land.

(iv) The value of the portion a son received is Rs.56000. Find the value of the land Mr. Been had earlier.

02) The diagram shows a stage which having a rectangular part and two equal sectors.



(i) Find the radius of a sector.

(ii) Find the length of the arc of a sector.

(iii) It is planned that to decorate with colour ribbon around the edge of stage twice. Find the length of the ribbon needed to decorate the stage.

(iv) Find the total area of the stage.

(v) The cost of $1m^2$ floor canvas cloth is 45/=. Find the total cost of the canvas cloth that required to cover the whole floor.

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03. (a) The cost of production of a packet of milk powder of weight 400 g of a certain brand is Rs 1800.

i Find the price the producer sells it at to a retail dealer if he keeps a profit of 20%

ii. Find the price the retail dealer sells it at to the customers if he keeps a profit of 15%

iii. Find that how much more a consumer spends on a packet of milk than its cost of production.

(b) An auctioneer of lands charges 3% of the proceeds of the auction as commission by selling a land for Rs 800 000. Find the amount of money,

i. the auctioneer obtained.

ii. the land owner obtained.

04. There are 10 cards in a box numbered from 10 to 20 which are equal size and the same in the shapes. Consider the event of getting a card randomly from the box.

i. Write the sample space of the event.

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ii. Find the probability of the followings,

a. Getting a prime number.

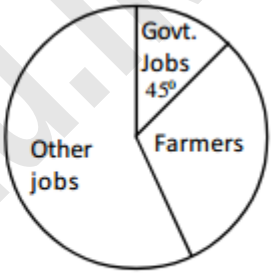
b. Getting a composite number.

c. Getting a triangular number.

d. Getting a number which is below 16.

05. (a) Information of a survey collected from 200 villagers on their livelihoods is depicted in a pie chart.
According to the pie chart,

(i) how many people are engaged in government jobs?



(ii) If the number of farmers depicted in the pie chart is 70, find the angle subtended at the centre by the sector representing farmers.

(b) Out of 23 number distribution, first 12 data is given below

16, 18, 18, 21, 23, 24, 24, 24, 28, 30, 32, 35

Find the followings,

i. Range.

ii. Mode.

iii. Median.

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T/KIN/MUSLIM LADIES COLLEGE

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First Term Evaluation - 2020

Marks

Grade-10

Mathematics - II

Time – 3Hrs

- Answer ten questions selecting five from **part A** and five from **part B**.
- Each question carries 10 marks.
- The volume of a right circular cylinder of base radius r and height h is $\pi r^2 h$
- The volume of a cone of base radius r and height h is $\frac{1}{3}\pi r^2 h$

Part – A

01. (a) Deposit Rs.30000 and get a set of cooking items as an offer. 6% of interest should be paid per annum to this transaction.

(i) Find the interest for Rs.30000 at the end of a year.

(ii) Find the total amount that can be obtained by depositing the same amount of money for 15 months.

(b) A trader buys 50 king coconuts at Rs.10 each. He sells 30 of them at Rs.12 each. Because of rainy whether the balance was sold at Rs.9 each.

i. Did the trader get gain or loss?

ii. Find the gain or loss percentage?

02. An incomplete table consisting of y values of the function $y = 2x - 3$ corresponding to the several given values of x is given below.

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

i. Find the value of y when $x = 1$.

ii. Find the value of y when $x = 1$.

iii. Using a suitable scale for both x-axis and the y-axis draw the graph.

Using the above graph,

iv. Write the gradient of the graph.

v. Write the intercept of the graph

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03. a. Simplify: $\frac{5}{2x+1} - \frac{1}{2x+1}$

b. Simplify: $\frac{3x}{2} - \frac{x}{5}$

c. Solve:

$$a + b = 8$$
$$a - b = 2$$

04. The data given below is the Electricity uses of a village during a certain month.

Units of Electricity	**40-50**	**50-60**	**60-70**	**70-80**	**80-90**	**90-100**
No of houses	**9**	**18**	**20**	**30**	**10**	**13**

i. Find the number of houses.

ii. Write the modal class.

iii. Find the mean units of a house that uses.

05. Factorize: i. $ax - bx$

ii. $4xy + 2y$

iii. $y^2 - 9$

iv. $y^2 + 7y - 18$

v. $3y^2 + 5y - 12$

06. a) Find the least common multiple of the given algebraic terms.

i. $4a^2b$, $6ab^3$

ii. $10xy$, $20x$, $20y$

iii. $4x^3y^2$, $8x^2y$, $2xy^4$

iv. $(a+b)$, $(a+b)^3$, $(a+b)^4$

v. $(x+y)$, x^2-y^2

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Part – A

07. 10, 13, 16, ..., is a number pattern,

i. Write the next term.

ii. Write the n^{th} term of this number pattern.

iii. Find the 10^{th} term of this number pattern.

iv. Which term in this number pattern is 67?

v. Show that 80 is not a term in this number pattern.

08. Using only a straight edge with a Cm/mm and pair of compasses for the following constructions. Show the construction lines clearly.

i. Construct a triangle PQR such that PQ=7Cm, $P\hat{Q}R = 60^0$ and QR=7Cm.

ii. Construct the perpendicular bisectors of PR and QR.

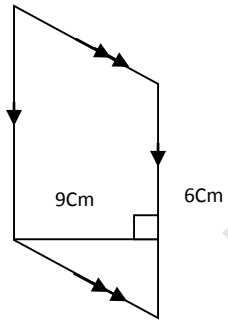
iii. Mark the point of intersection of the above bisectors as O.

iv. Draw a circle with the center as O and the radius OR.

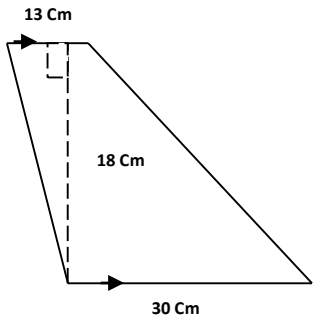
v. Measure and write the length of the radius.

09. a) Find the area of the figures given below

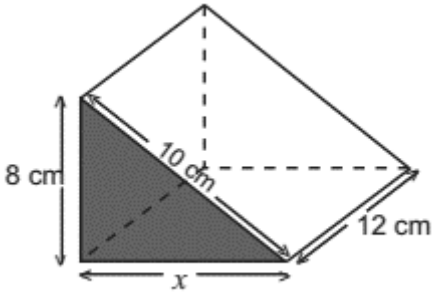
i.



ii



b)



The diagram shows a prism of which the cross section is a right angled triangle.

(i) Find the value of x in the right angled triangle.

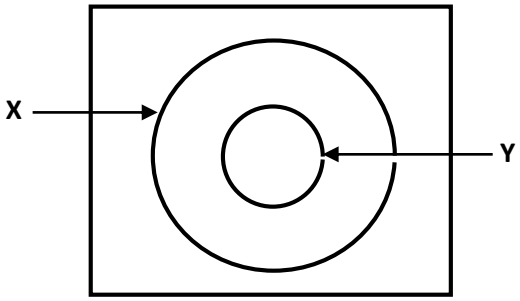
(ii) Find the area of the cross section.

(iii) Find the volume of the prism.

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10. Σ = { Integers between 10 and 20}
X = { Odd umbers from 10 to 20}
Y = { Trianguar numbers from 10 to 20}

i. Write the elements of the above sets separately.
ii. Represent the above elements in a venn diagram



iii. Using the venn diagram, Write the followings.

a. X'

b. $X \cap Y$

c. $X \cap Y'$

d. $\eta(X \cup Y)'$

11.

a) In a certain farm there was sufficient food for 12 cattle for 10 days. After two days another four cattle were bought and brought to the farm.

(i) For how many days is the food in the farm sufficient for one of the cattle?

(ii) What is the reduction in the number of days for which the food is sufficient, due to the increase in the number of cattle?

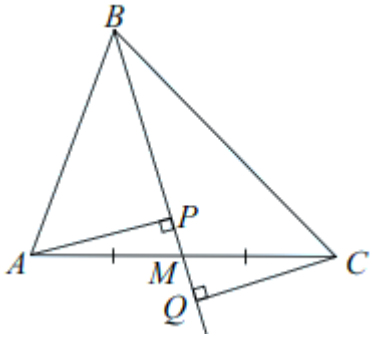
b) It takes 8 men 9 days to complete a certain task.

(i) How many days will it take one man to complete the same task?

(ii) What is the magnitude of the task in man days?

(iii) If 12 men are assigned the task, how many days will it take them to complete the task?

12. In the triangle ABC, the mid point ofAC isM. The perpendiculars drawn from Aand C meet BMand BM produced at Pand Q respectively.
Show that, i. $\Delta AMP \equiv \Delta MQC$
ii. $PM = MQ$



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