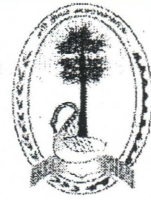




PROVINCIAL DEPARTMENT OF EDUCATION
NORTHERN PROVINCE



Second Term Exam – 2016

Maths

Index No :

Grade : 10

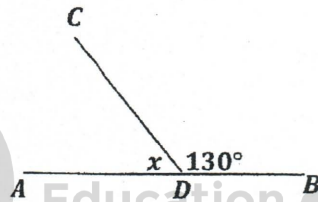
Time :- $3\frac{1}{2}$ Hours

Part - I

01) Simplify : $\frac{1}{5} + \frac{2}{5}$

02) Solve : $2x + 3 = 11$

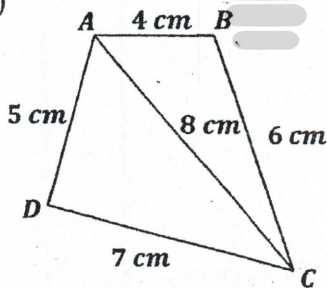
03) In figure AB is straight line.
Find the value of x



04) Remove brackets and simplify : $3(2x + 5) + x$

05) If Rs. 800 is divided between A and B in the ratio $3 : 2$, find the amount of money A get.

06)



Find the perimeter of the given quadrilateral.

07) Write two consecutive integers which are closest to $\sqrt{18}$.

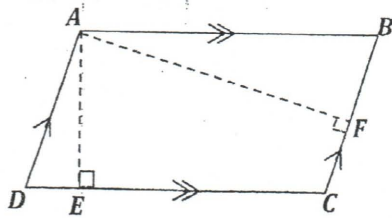
08) Find the least common multiple of $x^2, 3xy, 6x$

09) Find the value of $\sqrt{5184}$

10) If $x = 2, y = 3$ Find the value of $x^2 + xy$.

11) Write any two Conditions two triangles to be congruent.

12)



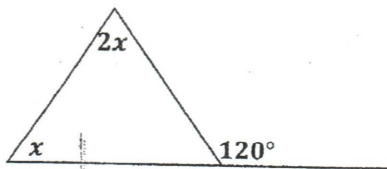
In figure $ABCD$ is a parallelogram

If $DC = 15 \text{ cm}$, $AE = 8 \text{ cm}$, $BC = 12 \text{ cm}$

Find the length of AF

13) Factorize : $9x^2 - 6x$

14)



If figure, find the value of x .

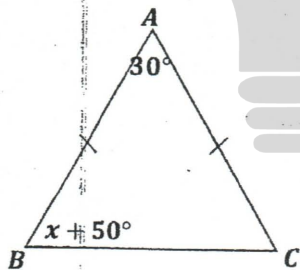
15) 10 men can finish a certain work within 12 days. How many days are needed for 4 men to complete half of the above work.

16) Simplify : $\frac{x}{(x-2)} + \frac{2}{(2-x)}$

17) How much is 60% of Rs. 500.

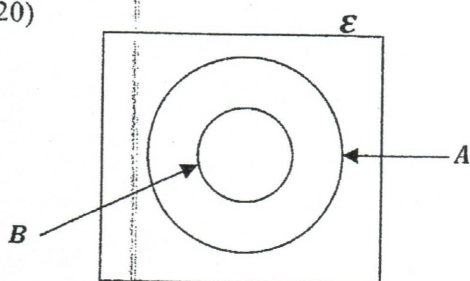
18) What is the simple interest for 3 years of Rs. 2000 at 6% simple interest per annum.

19)



According to the data given in the diagram, find the value of x .

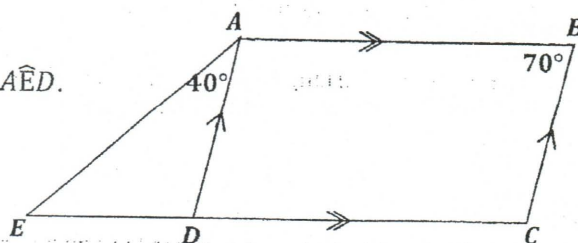
20)



Shade the set region $A \cap B^c$ in the given Venn diagram.

21) In figure $ABCD$ is a parallelogram.

$\angle ABC = 70^\circ$, $\angle EAD = 40^\circ$ find the magnitude of $\angle AED$.



22) Simpli

23) Write

(0,2).

24) Make

25) If the n

14, 15

22) Simplify : $2 \lg 5 + 2 \lg 3 - \lg 2$

23) Write the equation of the straight line which parallel to $y = 2x + 3$ and passes through the point $(0,2)$.

24) Make x the subject of the formula $lx + my = n$

25) If the mean of the given distribution is 17. Find the value of x

14, 15, x , $x + 1$, 19, 21.

$$25 \times 2 = 50$$



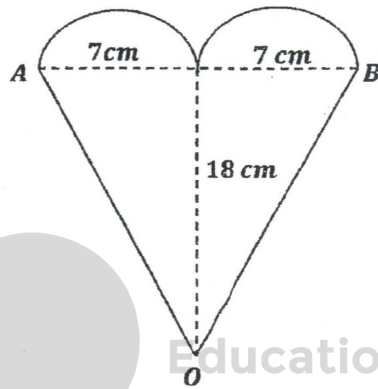
01) a) Simplify : $\left(\frac{1}{2} + \frac{1}{3}\right) \div \frac{1}{6}$

b) A person travelled $\frac{2}{5}$ of his journey by walk and $\frac{2}{3}$ of remaining by bus and the rest distance by three wheeler.

- What fraction of the whole distance is remaining after walking.
- What fraction of the whole distance is travelled by bus.
- If the travels 1.2 km by three wheeler, find the total distance of his journey.

$$(3 + 2 + 2 + 3)$$

02)



The figure shows decoration cut from a tissue sheet to make a decoration object.

Answer the following questions using the pattern.

- Find the area of a semi circle.
- Find the area of triangle OAB.
- Find the total area of the figure.
- If pearls are pasted long the semicircular arcs with 2cm space, How many pearls are needed to this purpose.

$$(3 + 2 + 2 + 3)$$

03)

- Remove brackets and simplify
 $(3x + 2)(2x - 3)$
- If $x + y = 10$ and $xy = -6$ find the value of $x^2 + y^2$.
- Solve : $x^2 - x - 6 = 0$

$$(3 + 3 + 4)$$

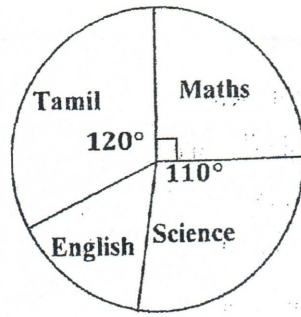
04) The pic

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05)

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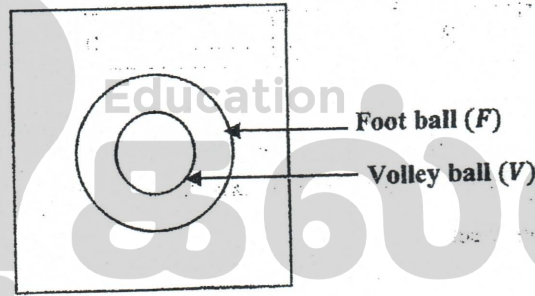
4) The pie chart given here shows the information about favorite subjects of grade 10 students.



- Which subject likes most number of students?
- Find the magnitude of the angle represents the students like English.
- If 55 students like Science, Find the number of students likes Tamil.
- Find the total number of students in the class.
- How many more students is the number of students like Science than number of students like Maths.

$$(1 + 2 + 3 + 2 + 2)$$

05)



The Venn diagram given here shows the information about the prefer games of 50th grades 10 students in a certain School.

If the number of students play foot ball is 35 and the number of students play foot ball only is 10.

- How many students play volley ball?
- How many students do not play at least one of the two games.
- The set represents the students play foot ball as F , and volley ball as V , write the relationship between the two sets in set notations.
- Shade the set region $(F \cap V^c)$

$$(3 + 2 + 2 + 3)$$

Part - II

❖ Answer Only Five Questions.

- 06) a) The annual value of Kumar's house is Rs. 50000. Kumar gave his house to Ravi for rent at Rs. 4000 per month. He spent 10% of the money gained from the rent in one year to the maintenance of the house and paid 8% of the annual value as assessment tax of the house.

- i) How much money gained as rent for one year.
- ii) Find the amount of money paid as assessment tax.
- iii) Find the amount of money he spent for the maintenance of the house.
- iv) How much is the balance.

- b) The value of a camera is Rs. 20000. If Rs. 8000 is paid as duty, when the camera is imported. Find the rate percent charged as duty?

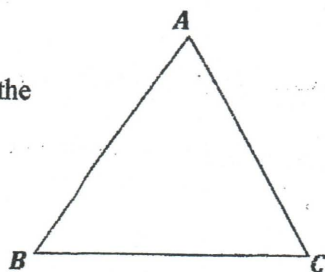
(2 + 4 + 4 + 6 + 4)

- 07) An incomplete table to draw the graph of the function $y = x^2 - 4$ is given below.

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

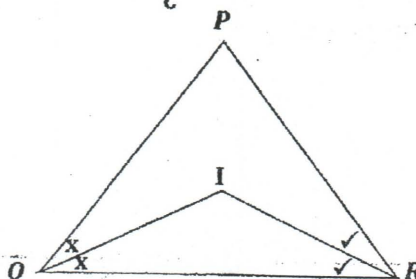
- a)
 - i) Fill in the blanks.
 - ii) Taking 10 small divisions as 1 unit along to both x axis and y axis as scale and draw the graph of the function on graph sheet.
- b) Using your graph
 - i) Write the co-ordinates of the turning point
 - ii) Find the values of x when $y = 0$
 - iii) Find the roots of the equation $x^2 - 4 = 0$
 - iv) Find the values of x when $y = 1$ and hence find the value of $\sqrt{5}$.

- 08) i) In $\triangle ABC$, if $AB = AC$.
Write the relationship between the angles \widehat{ABC} and \widehat{ACB} .

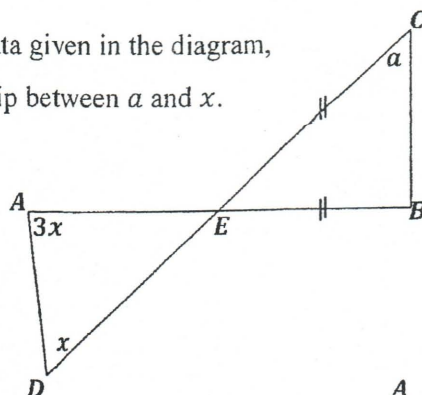


- ii) In $\triangle PQR$ if $\widehat{QPR} = 80^\circ$.

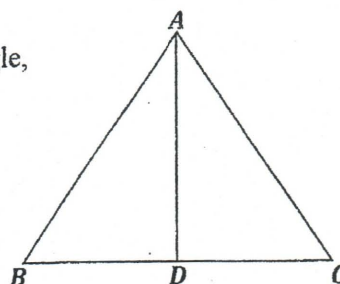
- a) Find the value of $\widehat{PQR} + \widehat{PRQ}$
- b) Find the value of \widehat{QIR}



- iii) According to the data given in the diagram, write the relationship between a and x .



- iv) In figure $\triangle ABC$ is an equilateral triangle, AD is the bisector of the angle \widehat{BAC}
- Find the magnitude of \widehat{BAC} .
 - Find the magnitude of \widehat{ADB} .



09) i) Evaluate : $64^{\frac{2}{3}} \times 25^{\frac{1}{2}}$

ii) Simplify : $\frac{(2a^2)^2 \times 3a^{-4}}{12a^5}$

iii) If $\log_x 2401 = 4$ find the value of x

iv) Simplify using logarithmic table.

$$\frac{15.46 \times 273.8}{28.45}$$

Education

$$(4 + 5 + 4 + 7)$$

10) i) Solve $5x - 8 = 22$

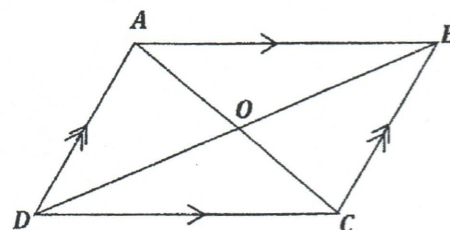
- ii) The cost of 2 exercise books and a pen is Rs. 50; and the cost of an exercise book and two pens is Rs. 40.

- Taking the price of an exercise book as Rs. x and the price of a pen as Rs. y Write two equations in x and y .
- Find the price of a pen and exercise book separately by solving the above equations.

iii) Expand and simplify : $(2x - 3y)^2$

11)

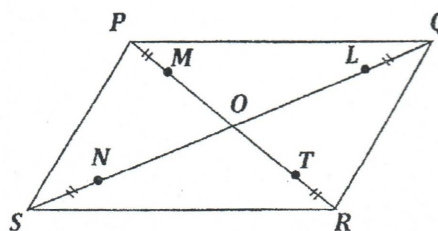
- i) In the given parallelogram. Write two properties of the length of the diagonals.



- ii) The diagonals of parallelogram PQRS are intersect at O

$$PM = TR, SN = QL$$

- Show that $NO = OL$
- Show that $MO = OT$
- Show that $MLTN$ is a parallelogram
- Show that $SMQT$ is a parallelogram





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