DELHI PUBLIC SCHOOL, DURGAPUR

QUESTION BANK & REVISION SHEET FOR FINAL TERM (2017-18)

CLASS-VII

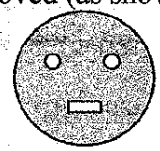
SUB:MATHEMATICS

AREA & PERIMETER

Q 1) The sides of a rectangular park are in the ratio 4:3.If its area is 1728m^2 ,find the cost of fencing it at Rs 30 per meter.

Q 2) A godwown is 50 m long,40 m broad and 10 m high. Find the cost of whitewashing its four walls and celling at Rs 25 per m^2

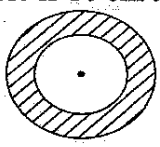
Q 3) From a circular card sheet of radius 14 cm, two circles of radius 3.5cm and a rectangle of length 3cm and breadth 1 cm are removed (as shown in the figure). Find the area of the remaining sheet.



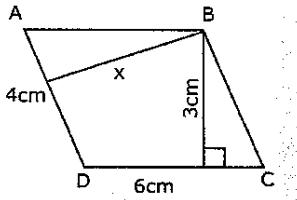
(Take = 22/7)

Q 4)The figure given below, shows two circles with the same centre. The radius of the larger circle is 10 cm and the radius of the smaller circle is 4 cm.Find: a)the area of the larger circle, b)the area of the smaller circle,

c)the shaded area between the two circles. (Take $\pi = 3.14$)



Q 5)The two sides of the parallelogram ABCD are 6cm and 4cm. The height corresponding to the base CD is 3cm, as shown in fig. Find the(i) area of the parallelogram (ii) the height corresponding to the base AD.



6) Find the area of the shaded portion & the area of the remaining portion.

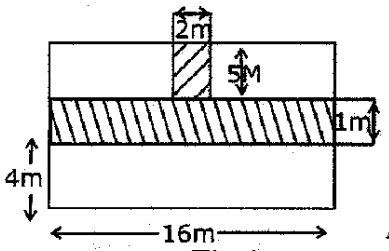


Fig:1

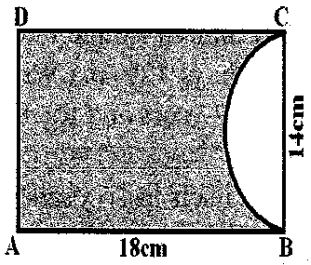


Fig:2

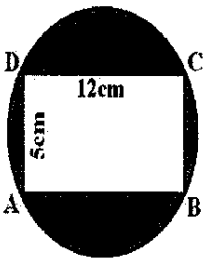


Fig:3

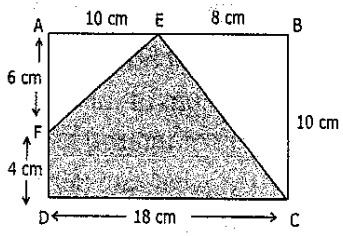


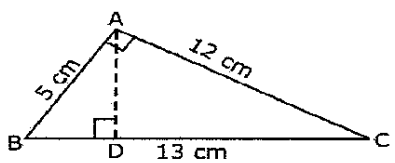
Fig:4

Q7) The area of a square and a rectangle are equal. If the side of the square is 40 cm and the breadth of the rectangle is 25 cm, find the length of the rectangle. Also, find the perimeter of the rectangle.

Q 8) Anand took a wire of length 44 cm and bent it into the shape of a circle. Find the radius of that circle. Also, find its area. If the same wire is bent into the shape of a square, what will be the length of each of its sides? Which figure encloses more area – the circle or the square?

Q 9) A wire is in the shape of a square of side 10 cm. If the wire is rebent into a rectangle of length 12 cm, find its breadth. Which encloses more area – the square or the rectangle?

Q 10). Triangle ABC is right angled at A. AD is perpendicular to BC. If AB= 5 cm, BC = 13 cm and AC = 12 cm, Find the area of triangle ABC. Also find the length of AD



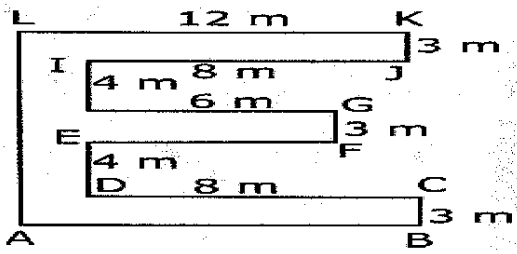
Q 11) Find the area of a Rhombus in which each side is 15 cm long and one of whose diagonal is 24 cm. Also find its perimeter.

Q 12) In a quadrilateral ABCD, AB=28 cm ,BC=26 cm,CD=50 cm and DA=40 cm And diagonal AC=30 cm .Find the area of the quadrilateral.

Q 13)The hour and minute hands of a clock are 4.2 cm and 7 cm long respectively.Find the sum of the distances covered by them in 1 day.

Q 14)A circular flower bed is surrounded by a path 4 m wide.The diameter of the flower bed is 66 m. What is the area of this path? ([]=3.14)

Q 15) Find the perimeter of the given figure.



Q 16) A rectangular garden is 65cm long and 50cm wide. Two cross paths each 2m wide are to be constructed parallel to the sides. If these paths pass through the centre of the garden, find the cost of constructing the paths at the rate Rs. 69 per m^2.

PROFIT – LOSS, SIMPLE INTEREST

Q 1) In what time will Rs 3600 amount to Rs 4320 at 8% per annum simple interest?

Q 2)Shanta borrowed Rs 6000 from a bank for 3 years 8 months at 12% p.a.What amount will clear off her debt?

Q 3) A sum of money at simple interest amounts to Rs. 696 in 2 years and Rs. 840 in 5 years. Find the sum and the rate of interest.

Q 4)At what rate per cent p.a simple interest will a sum treble itself in 16 years?

Q 5)On selling a computer for Rs 24480, a dealer loses 4%. For how much should he sell it to gain 4%?

Q 6) The cost of a flower vase is Rs 120. If the shopkeeper sells it at a loss of 10%, find the price at which it is sold.

Q 7) A man got a 10% increase in his salary. If his new salary is Rs 1,54,000, find his original salary.

Q 8)Pankaj sells two cycles for Rs 2376 Each. On one he gains 10% and on the other he loses 10%. Find his gain or loss percent.

Q 9)Mohit sold watch to Karim at a gain of 10% and Karim sold it to Rahim at a gain of 4%.If Rahim pays Rs 14300 for it, for how much did Mohit purchase it?

Q 10)A watch when sold at a profit of 6% yields Rs 870 more than when it is sold at a loss of 6%.Find the cost price of the watch.

Q 11) A sum of Rs 10,000 is borrowed at a rate of interest 15% per annum for 2 years. Find the simple interest on this sum and the amount to be paid at the end of 2 years.

Q 12)In what time will Rs. 1860 amount to Rs. 2278.50, if simple interest is calculated at 9% per annum?

Exponents and Power

Q 1) Simplify i)$(2^{20}\div 2^{15})\times 2^3$ ii)$2^3\times 2^2 5^5$ iii)$\frac{2\times 3^4\times 2^5}{9\times 4^2}$ iv) $\frac{25\times 5^2\times t^8}{10^3\times t^4}$ v)$\frac{12^4\times 9^3\times 4}{6^3\times 8^2\times 27}$

vii) $\frac{4^5\times 9^5\times x^7}{2^3\times 3^6\times x^5}$ viii)$\left[\left\{\left(\frac{-1}{3}\right)^2\right\}^{-2}\right]^{-1}$ ix) $\frac{5^{n+1}\times 10+25\times 5^n}{3\times 5^{n+2}+2\times 5^{n+2}}$

Q 2) What number should be multiplied by $(-8)^{-1}$ so that the product may be equal to $(10)^{-1}$?

Q 3) By What number should $(-15)^{-1}$ be divided so that the quotient is equal to $(-5)^{-1}$?

Q 4) Express the following numbers in the standard form.

i)23000000 ii)829340000000000 iii)270659

Q 5)Find the number from each of the following expanded forms.

i)4007218 ii)5807294 iii)50074

Q 6) Find x so that

[redacted]

Q1)Draw a line AB and draw another line CD parallel to AB at a distance of 3.5 cm from it.

Q 2)Construct a triangle PQR in which QR=6cm, PQ=4.4cm and PR=5.3cm. Draw the bisector of P.

Q 3) Construct a triangle ABC in which AB=AC=5.2 cm and $\angle A=120$ .Draw AD $\perp$ BC.

Q4)Construct a triangle ABC in which AB=AC=4.8cm and BC=5.3 cm. Measure B and C. Draw AD $\perp$ BC.

Q5)Construct a right angled triangle one side of which measures 3.5cm and the length of whose hypotenuse is 6 cm.

Q 6)Construct a ΔABC in which BC=5.3 cm, $\angle B=45^0$ and $\angle A=75^0$

The Triangle and its Properties

Q 1)Each of the two equal angles of an isosceles triangle is twice the third angle.Find the angles of the triangle.

Q 2) In Δ ABC ,if $2\angle A = 3\angle B = 6\angle C$,calculate $\angle A, \angle B and \angle C$

Q 3) Is it possible to draw a triangle ,the lengths of whose sides are given below : i) 3cm,5cm ,2cm ii)5.5cm, 7cm,3cm

Q 4) Two sides of a triangle are 5 cm and 9 cm long. What can be the length of its third side?

Q 5) In triangle PQR, PS is the median of the triangle, prove that PQ + QR + RS > 2 PS

Q 6) In the Quadrilateral ABCD prove that AB + BC + CD + DA > AC + BD

Q 7) If in a right angle isosceles triangle area is 32 cm^2 . Find the sides of the triangle.

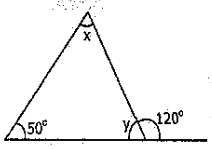
Q 8) A 15 m long ladder reached a window 12 m high from the ground on placing it against a wall at a distance a metre from the wall. Find the distance of the foot of the ladder from the wall

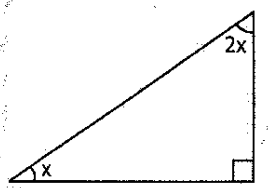
Q 9) A tree is broken at a height of 12 m from the ground and its top touches the ground at a distance of 5 m from the base of the tree. Find the original height of the tree.

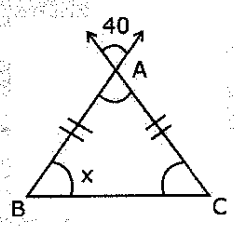
Q 10)The diagonals of a rhombus measure 10 cm and 24 cm. Find its perimeter.

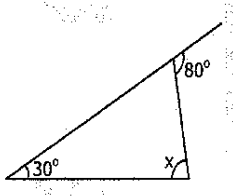
Q 11)A ladder 17 m long reaches a window which is 8 m above the ground, on one side of the street. Keeping its foot at the same point, the ladder is turned to the other side of the street to reach a window at a height of 1 m .Find the width of the street.

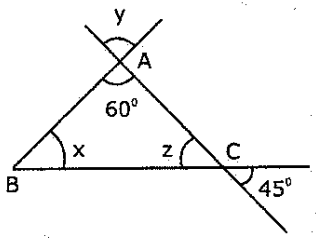
Q 12)Find the value of unknown angles in the following figure:

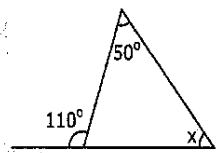


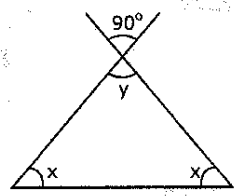












Q 13) Find the perimeter of the rectangle whose length is 40 cm and one of the diagonal is 41 cm.

DATA HANDLING

Q 1) Marks obtained by 12 students in a class are 27, 32, 35, 28, 42, 46, 38, 41, 39, 40, 46, 36 . Find : Highest Marks , Lowest Marks ,Range

Q 2) The daily wages (in rupees) of 60 workers in a factory are given below:

Daily Wages(in Rs)	140	150	160	180	190
No of workers	14	16	15	7	8

Find the mean daily wages.

Q 3) The height of 15 students are given in a 165, 155, 168, 160, 163, 162, 165, 168, 156, 159, 160, 164, 163, 165, 160.

Find : i)The range of height , ii) The Mode , iii) The Median

Q 4)The heights (in cm) of 50 students of a class are given below:

Height (in cm)	156	154	155	151	157	152	153
No of students	8	4	10	6	7	3	2

Find the median height .

Q 5) Draw a bar graph of the following data using suitable scale :

i)

Year	2001-02	2002-03	2003-04	2004-05	2005-06
Imports(in thousand crore Rs)	148	176	204	232	180

ii)

Country	Japan	India	Britain	Ethiopia	Cambodia
Life expectancy(in years)	76	57	70	43	36

6) The height of 15 students are given in a 165, 155, 168, 160, 163, 162, 165, 168, 156, 159, 160, 164, 163, 165, 160. Find : i)The range of height , ii) The Mode , iii) The Median

Q 7) The weights (in kg.) of 15 students in a class are: 38,42,35,37, 45, 50, 32, 43, 43, 40, 36, 38, 43, 38, 47
Find :(i)the mode and median of this data , ii) Is there more than one mode?

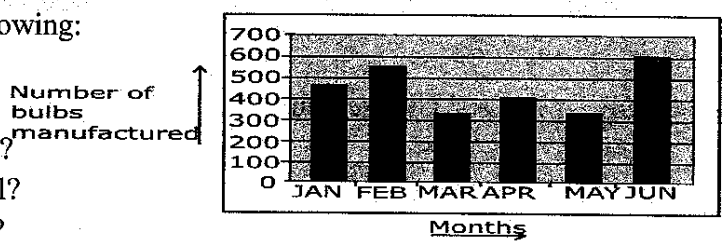
8)In a survey of 100 ladies, it was found that 36 like coffee while 64 dislike it. If a lady is chosen at random what is the probability that the chosen lady a)likes coffee, b)dislikes coffee?

Q 9) What is the probability of the occurrence of an Odd number if a dice is tossed once?

Q 10) There are 30 cards which are numbered from 1 to 30. What is the probability of getting a card having prime number if a card
selected at random?

Q 11) A box has 10 balls. 3 balls are yellow, 2 balls are red and the remaining are green. Find the probability that a ball drawn is
a)red. , b)yellow. ,c)green.

Q 12) Read the graph carefully and answer the following:



(i) What does the graph represent?

(ii) In which month was the production maximum?

(iii) In which two months was the production equal?

(iv) In which month was the production minimum?

(v) What was the production in January?

CONGRUNCE OF TRINGLES

Q1)Show that in an isosceles triangle, the angles opposite to equal sides are equal.

Q2)Prove that the bisector of the vertical angle of an isosceles triangle bisects the base at right angle.

Q3)In the below Fig:1, AB and CD bisect each other at O.

(i)State the three pairs of equal parts in two triangles AOC and BOD.

(ii)Prove that $\Delta BAC \cong \Delta DAC$

Q 4)In the above sided Fig 2, ray AZ bisects ΔDAB as well as ΔDCB.

(i)State the three pairs of equal parts in triangles ΔBAC and ΔDAC.

(ii)Is $\Delta BAC \cong \Delta DAC$? Give reasons.

(iii)Is AB = AD? Justify your answer.

(iv)Is CD = CB? Give reasons.

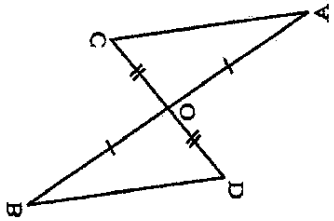


FIG:1

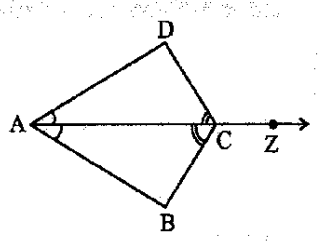


FIG:2

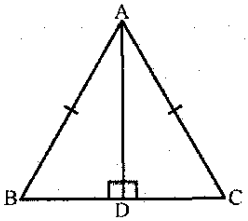
Q 5)ABC is an isosceles triangle with AB = AC and AD is one of its altitudes.

(i)State the three pairs of equal parts in □ADB and □ADC.

(ii)Is $\Delta ADB \cong \Delta ADC$? Why or why not?

(iii)Is ∠ B = ∠ C? Why or why not?

(iv)Is BD = CD? Why or why not?

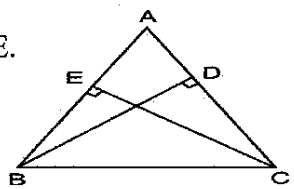


Q 6)BD and CE are altitudes of ΔABC such that BD = CE.

i)State the three pairs of equal parts in ΔCBD and ΔBCE.

ii)Is ΔCBD≅ ΔBCE? Why or why not?

iii)Is ∠DCB = ∠EBC? Why or why not?



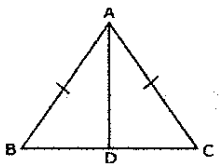
Q 7) In the given fig. , can you use ASA congruence rule and conclude that $\Delta AOC \cong \Delta BOD$?

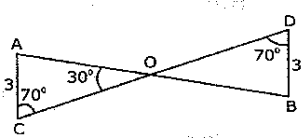
Q 8) In ΔABC, AB = AC and AD is the bisector of ∠BAC.

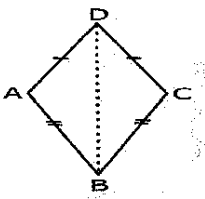
(i)State three pairs of equal parts in triangles ADB and ADC.

(ii)Is ΔADB ≅ ΔADC? Give reasons.

(iii)Is ∠B = ∠C? Give reasons.







Q 9) In fig, AD = CD and AB = CB.

(i)State the three pairs of equal parts in ΔABD and ΔCBD.

(ii)Is ΔABD ≅ ΔCBD? Why or why not?

(iii)Does BD bisect ABC? Give reasons.

Q 10) ΔABC is isosceles with AB = AC as shown in figure. Line segment AD bisects ∠A and meets base BC in D. Find the third pair of corresponding parts which make ΔADB ≅ ΔADC by SAS congruence condition. Is it true to say that BD=DC?

Three Dimensional Shapes

1. Complete this table:

NAME OF THE SOLID	NO OF FACES	NO OF VERTICES	NO OF EDGES
CUBOID			
CYLINDER			
CONE			
TRIANGULAR PYRAMID			
TRIANGULAR PRISM			

2. Write five examples of i)a cone ii) a sphere iii)a cuboid iv) a cylinder.

SYMMETRY

Q 1) State the number of lines of symmetry for the following figures:

(a) An equilateral triangle (b) An isosceles triangle (c) A scalene triangle (d) A square (e)A rectangle (f) A rhombus

(g) A parallelogram (h) A quadrilateral (i) A regular hexagon (i)A circle

Q 2) Draw, wherever possible, a rough sketch of

i)a triangle with both line and rotational symmetries of order more than 1.

ii)a triangle with only line symmetry and no rotational symmetry of order more than 1.

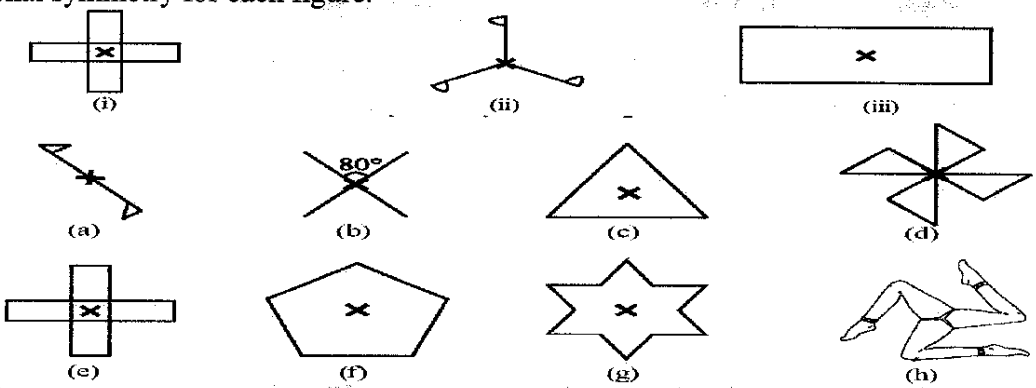
iii)a quadrilateral with a rotational symmetry of order more than 1 but not a line symmetry.

iv)a quadrilateral with line symmetry but not a rotational symmetry of order more than 1.

Q 3) Which letters of the English alphabet have reflectional symmetry about

a)a vertical mirror (b) a horizontal mirror c)both horizontal and vertical mirrors.

Q 4) Give the order of rotational symmetry for each figure:



Q 5) Complete the following table:

Alphabet Letters	Line Symmetry	Number of Lines of Symmetry	Rotational Symmetry	Order of Rotational Symmetry
Z				
S				
H				
O				
E				
N				
C				

LINES AND ANGLES

1.Find the angle which is equal to its supplement.

2.Among two supplementary angles,the measure of the larger angle is 36^0 more the measure of the smaller.Find their measures .

3.AOB is a straight line and the ray OC stands on it .

If $\angle AOC = (2x-1)^0 and \angle BOC = (3x+20)^0$,find the value of x .Also find $\angle AOC and \angle BOC$

4.AOB is a straight line and the ray OC and OD stand on it.If $\angle AOC = 65^0 \angle BOD = 70^0 and \angle COD = X^0$,find the value of x.

5.Rays OA,OB,OC and OD are such that $\angle AOB = 56^0 \angle BOC = 100^0 and \angle COD = X^0 and \angle DOA = 74^0$ .Find the Value of x

PERCENTAGE

1.Find a)32% of 425 b) 7.5% of 600 ml c)8.5 % of 5 kg d) 136% of 70

2.What amount is 10% more than Rs 90.

3. If 3% of x is 9 ,find the value of x.

4. What percent of 84 is 14?

5.Convert into a fraction : a)120% b) 0.06 % c) 22.75% d) 6.25 % e) 0.8%

6.Convert into decimal form:a) 45% b) 3.6% c)0.23% d) 127%

7.Find the number whose $6\frac{1}{4}$ % is 2.

8. If 15% of the worker in a factory are females and the number of male worker is 272,find the total Number of workers in the factory.

9.In a examination,96%of the candidate passed and 50 failed .How many candidate appeared.

10.Sonal went to school for 219 days in a full year .If her attendance is 75%,find the number of days On which the school was open.

11. The price of a sweater is increased by 8% .If its increased price is Rs 1566,find the original price.

12.Nikhil income is 20%less than that of Akhil .How much percent is the income more than that of Nikhil's?

13.The value of a machine depreciates of 10% every year .If its present value is Rs 387000,what was Its value 1 years ago ?

LINEAR EQUATION

1).5(2x-3)-3(3x-7) =5 2) 3x+2(x+2)=20 –(2x-5) 3) 13(y-4)-3(y-9)-5(y+4)=0

4) $\frac{2m+5}{3} = 3m-10$ 5) $\frac{2x}{3} = \frac{3x}{8} + \frac{7}{12}$ 6) $\frac{y-1}{3} - \frac{y-2}{4} = 1$

7) $\frac{2x-1}{3} - \frac{6x-2}{5} = \frac{1}{3}$

8) The sum of two consecutive multiples of 3 is 69.Find them.

9) The length of a rectangular plot exceed its breadth by 5 m.If the perimeter of the plot is 142 m ,find the Dimension of the plot.

10.In an examination ,a student requires 40% of the total marks to pass .If Rupa get 185 marks and failed by 15 marks ,find the total marks.

11.Two complementary angles differ by 8^0,find the angles.

12.A sum of Rs 500 is in the form of denomination of Rs 5 and Rs 10 .If the total number of notes is 90,find the notes of each type.

13.Five years ago a man was seven times as old as his son.Five years hence,the father will be three times as Old as his son.Find their present ages.

14.Find two consecutive positive odd integers whose sum is 76.

15.A man sold an articles for Rs 495 and gained 10 % on it.Find the cost price of the articles.

ALGEBRAIC EXPRESSION

1.Find the product :a) $(5x+7)(3x+4)$ b)$(9x+5y)(4x+3y)$ c) $(x^2-a^2)(x^2+a^2)$
d) $(3x+2y-4)(x-y)$ e) $(x^2-5x+8)(x^2+2)$ f) $(x^2-xy+y^2)(x+y)$

2.Simplify: a)$(3x+4)(2x-3)+(5x-4)(x+2)$ b) $(5x-3)(x+4)-(2x+5)(3x-4)$

c) $(9x-7)(2x-5)-(3x-8)(5x-3)$ d) $(3x^2+5x-7)(x-1)-(x^2-2x+3)(x+4)$

Syllabus for Final term Exam: i)Profit loss ii)Simple Interest iii)Construction iv)Triangle and its Properties v)Exponents vi)Mensuration(Area & Perimeter) vii)Symmetry viii)Congruence ix)Data handling x)Three Dimensional Shapes xi)congruence of triangles xii) Percentage xiii) Probablity xiv) linear equation xv)Lines and Angles xvi) Algebraic expression (MULTIPLICATION)