Task-1: Do play tic tac toe with your friend or a family member.

Roll the number cube(dice) and write number got on rolling in the star.On your turn ,claim a space and multiply the factor in the star by the number written in that space.Write their product at that place of your choice.Then other person will do the same.The one who got multiples in a row first will win! One sample is done for you.Play this game minimum 2-3 times in your vacations.
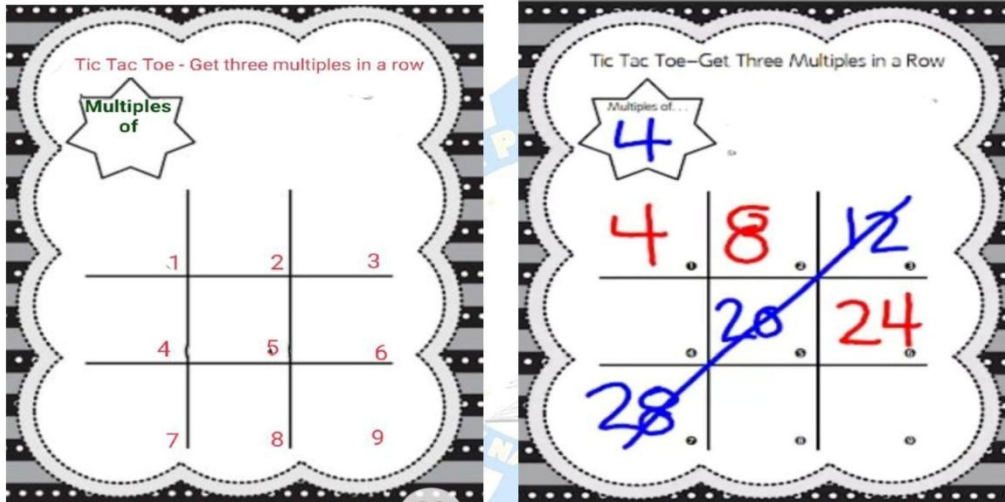
Task-2: Do experience Colourful Maths.

Task-3: Check it out.........Is your life more PRIME or COMPOSITE?

Prime or Composite?

Directions: Answer each question. Determine whether the number is a prime or composite number. Circle P (prime) or C (composite) at the end of each line. In the space below the line, write the factors of that number.

1. How many books are you reading right now? _____ P or C

2. How many years have you attended school? _____ P or C

3. What are the last two numbers of your **DOB** _____ P or C

4. Which season is your favorite? _____
   How many letters are in that word? _____ P or C

5. What is your favorite color? _____
   How many letters are in that word? _____ P or C

6. How many **family members are there in your family** _____ P or C

7. When is your birthday? _____
   (Write the month and day in numbers.)
   What is the sum of those two numbers? _____ P or C

8. What are the last four numbers of your phone number? _____
   What is the sum of those four numbers? _____ C

                                                      P or C

Task-4: Let's Recall Divisibility rules.You need to do for 2,3,4,5,6,8,9,10 and 11.Rest are for your knowledge only.Frame one example using large numbers for each of these numbers.

Divisibility Rules

2	if its last digit is even (0, 2, 4, 6, 8).
3	if the sum of the digits is divisible by 3.
4	if the last two digits of a number are divisible by 4.
5	if the last digit is either 0 or 5.
6	if the number is divisible by both 2 and 3.
7	if the last digit of the number is doubled and subtracted from the rest of the number and this difference is divisible by 7.
8	if the last three digits of a number are divisible by 8.
9	if the sum of the digits is divisible by 9.
10	if the number ends with 0.
11	if the difference of the alternating sum of digits is a mulitple of 11.
12	If the number is divisible by both 3 and 4.

Note: Revise all the topics covered along with the assignments.Take print outs and do perform Task 1 to 4 and paste them on your Maths notebook.

MATHEMATICS FOR CLASS VII

General Instructions :
1. Do all the project work /presentation in your class work notebook.
2. Revise the syllabus covered so far.
3. Thoroughly practice assignments.

1. PROJECT WORK

Reference topic : Data Handling

Roll numbers 1- 22

Collect the data of the number of national parks in any five states of India. Choosing an appropriate scale represent this data by a bar graph and answer the following question. Which state has the maximum number of National Parks ?

Gather the information of number of wildlife sanctuaries in any five states of India. Choosing an appropriate scale represent this data by a bar graph and answer the following question. Which state has the maximum number of National Parks ?

2. Life skills

Reference topic : Fractions and decimals (Survey of vegetables)

Go to the nearby vegetable vendors and note the price per kg for 5 vegetables, now calculate the total amount of money you will have to pay if you want to buy eg: 1.5 kilograms of cucumber 3.75 kilograms of peas , 2.25 kilograms of potatoes, 0.75 kilograms of lady fingers. Compare this amount with your friend and find out in which area are vegetables more expensive. Write down your observation in your c.w. notebook.

Or

Calculate wrappers of eatables say namkeen, wafers, biscuits, chocolates etc and note down the energy given at the back under the nutrition facts. It is given in kilo calorie per 100 grams. In a table note down the values for each of the wrappers and calculate the amount of energy for $\frac{1}{2}$, $\frac{1}{5}$, $\frac{1}{10}$ of 100 gram for each of the wrappers you collected.

3. **Integrating Maths with other subjects**

Reference topic : Integers

The solar system is a planetary system consisting of the sun and other objects that orbit around it. Among all the objects there are 8 large planets. Find the minimum and maximum surface temperature of each planet and find out why life is possible only on earth make a presentation on the same.

MATHEMATICS FOR CLASS VIII

General Instructions:
1. Do all the project work / puzzles in your class work notebook.
2. Revise the syllabus covered so far.
3. Thoroughly practice assignments.
PROJECT WORK
1. **Design a Table cloth**:
You are making a table cloth for a centre table or dining table of your home. Follow the instructions given below.
➡Measure the length and breadth of table.
➡The finished table cloth needs to hang down15cm over the edge of the table all the way around.
➡To finish the edge of the table cloth, you will fold down 2.5cm of material all around theedge.
➡Find the total perimeter and area of cloth required.
ACTIVITY
FOLLOW THE FOLLOWING INSTRUCTIONS: Write all the steps as mentioned below in notebook and paste the cuttings in place of figures given.
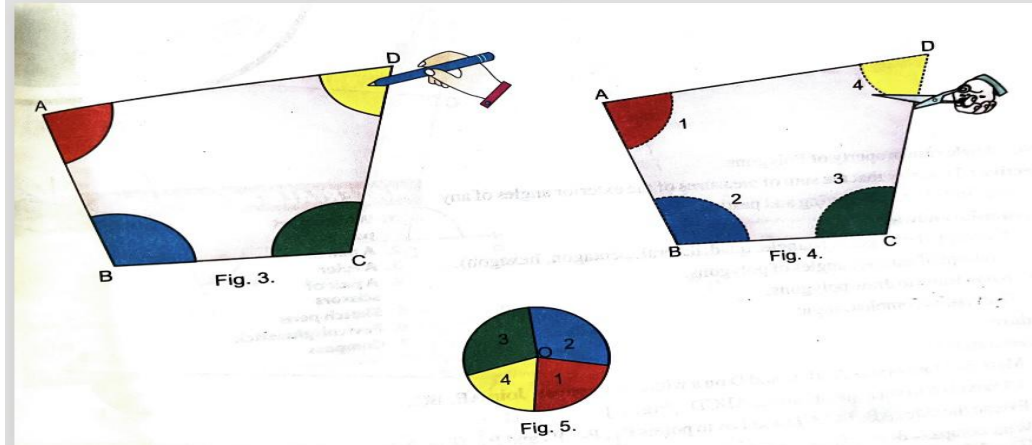ACTIVITY (ODD ROLL NUMBERS)
OBJECTIVE - To verify the sum of the four interior angles of a quadrilateral is 360° by paper cutting and pasting.
PROCEDURE

1. Cut a quadrilateral ABCD on a glaced paper. Draw four arcs with the same radii at each corner (i. e at each vertex of the angle) of the quadrilateral.
2. Colour the four arcs using sketch pens.
3. Cut the four arcs from the quadrilateral.
4. Paste the cutouts of arcs so obtained in the notebook to form a circle as shown below.

Fig. 3.

Fig. 4.

Fig. 5.
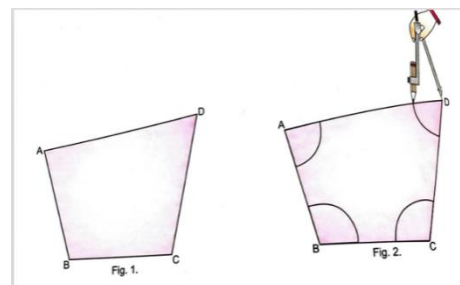
OBSERVATION
We observe that the four cutouts of the angles form a circle. Since the centre of a circle is of an anglemeasure 360°, we have
∠A + ∠B + ∠C + ∠D = 360°.
Thus, the sum of all four interior angles of a quadrilateral is 360°.

ACTIVITY II (FOR EVEN ROLL NUMBERS)
OBJECTIVE - To verify the sum of all exterior angles of any polygon is 360° by paper cutting and pasting.
PROCEDURE – CONSIDER A PENTAGON
1. Cut a pentagon MNOPQ on a glaced paper.
2. Draw five arcs with the same radii at each corner (i. e at exterior of each vertex of the angle) of the pentagon. (as shown in the figure)
3. Colour the four arcs using sketch pens.
4. Cut the five arcs from the pentagon.
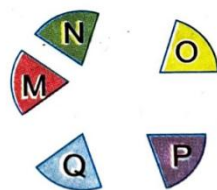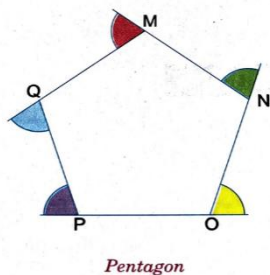
Pentagon

Cutouts of the pentagon

5. Paste the cutouts of arcs so obtained in the notebook to form a circle as shown below

OBSERVATION
We observe that the five cutouts of the angles form a circle. Since the centre of a circle is of an angle measure 360°, we have
∠M + ∠N + ∠O + ∠P+ ∠Q = 360°.
Thus, the sum of all exterior angles of any polygon is 360°.

CROSSWORD PUZZLE
Complete the following crossword puzzle using the given directions for across (from left to right) and down (from top to bottom):
Directions:
Across:
1. _____ means taking a term from oneside of an equation to the other side with its sign changed.
2. The value of the variable in an equation which makes LHS and RHS equal is called _____.
3. Inan algebraic term ax, 'a' is called _____ of x.
Down:
4. The other name of a solution of an equation.
5. A literal symbol which takes on various numerical values is called a _____.
6. A combination of constants and variables, connected by some or all basic operations is called an algebraic _____.

7. A polynomial of degree 1 is called a _____ polynomial.
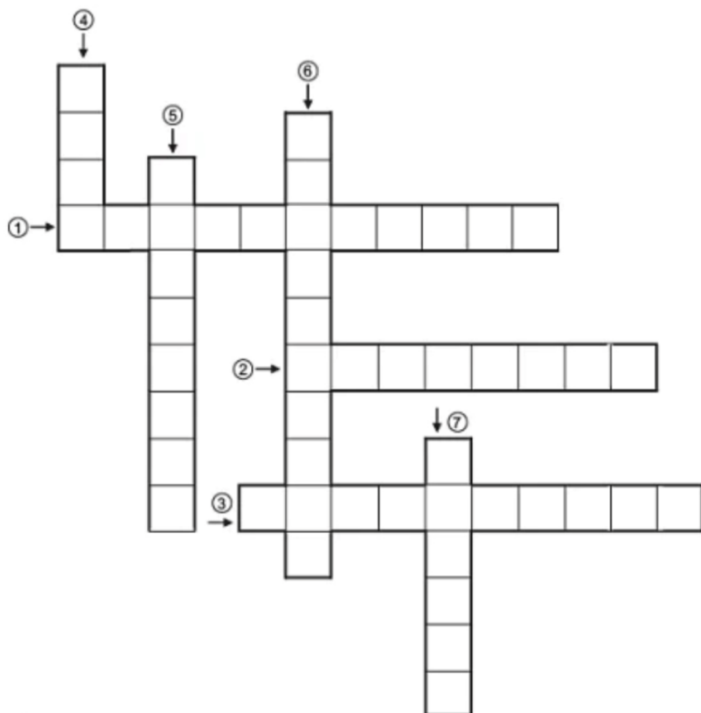
General Instructions:
1. Activities are to be done on practical file or practical notebook.
  2. MCQ to be done in class notebook.
  3. Revise the syllabus covered so far.
  4. Thoroughly practice assignments.

Activity1

Objective : To make a square root spiral of natural numbers by paper folding.
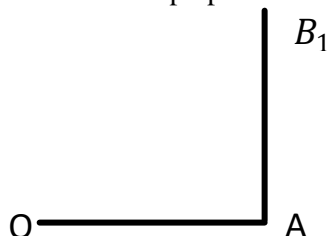
Materials Required
  • Sheet of paper
  • Geometry box
  • Set of sketch pens

Procedure
1. Take a point O on a sheet of paper and draw OA = 1 unit with the help of scale and draw it with red sketch pen.

O•————————————————•A

2. Fold the paper along the line OA and press the two parts together so that the crease OA is formed. At point A form another crease perpendicular to OA.

B_1

O•————————————•A

3. Unfold the paper and draw AB_1 = 1 unit by using scale and green sketch pen.
  Join OB_1 with the help of blue sketch pen.
  We observe that OAB_1 is a right angled triangle at A.
  By Pythagoras therem, we get
$OB_1^2 = OA^2 + AB_1^2$
$$= (1)^2 + (1)^2$$
$$= 1 + 1 = 2$$

$$OB_1 = \sqrt{2} \text{ UNITS.}$$

4. Fold the paper along the line OB_1 and press the two point together so that the crease OB_1 is formed. Now make another crease perpendicular to OB_1 at point B_1.

5. Unfold the paper and draw $B1B2 = 1$ unit with the help of scale and a **red** sketch pen .Join OB_2 by blue pen. Now we observe that triangle $OB_1 B_2$ is again a right angle triangle right angled at B_1.
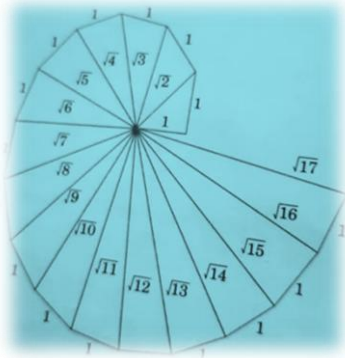
In $\Delta OB_1 B_2$ using Pythagoras theorem, We get
$$(OB_2)^2 = (OB_1)^2 + (B_1B_2)^2$$
$$= \left(\sqrt{2}\right)^2 + (1)^2$$
$$= 2 + 1 = 3$$
$$OB_2 = \sqrt{3}$$
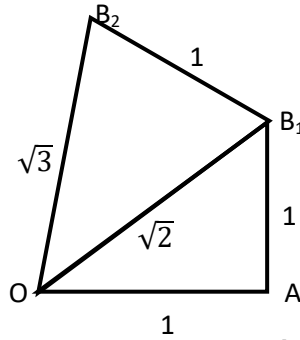
6. In the same way keep on doing [Repeat steps (4) and (5)] till we get $\sqrt{17}$

OBSERVATIONS

By doing this activity we observe that the lengths of **Blue line**
Segments OB_1, OB_2, OB_3, ……….
Are respectively $\sqrt{2}, \sqrt{3}, \sqrt{4}$ …….. and the shape formed by the red line segmente known as square root spiral.

CONCLUSION

From this activity we can draw a square root spiral of natural numbers easily.
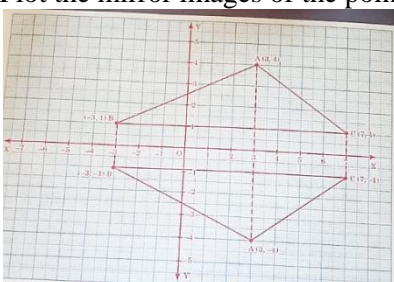
Activity2

Objective : To obtain mirror image of figures with respect to a given line.

Materials Required

- Graph papers
- A Ruler
- A pencil
- Sketch pens

Procedure

1. Draw two perpendicular lines on graph paper, as shown in figure .
2. Take three points A(3, 4), B(- 3, 1) and C(7,1) as shown in fig and join.
3. Plot the mirror images of the points of A,B and C with respect to x – axis, as shown in fig and join.

INFERENCE/CONCLUSION

When the mirror image of a figure is obtained with respect to the
x – axis, the x – coordinate is same whereas the sign of
y – coordinate is changed.

Activity 3

Objective : To prove if a transversal intersects two parallel lines then each pair of corresponding angles are equal.

Materials Required

1. Geomectry box (consisting – protector, pencil, eraser, sharpener and ruler etc.
2. Sheet of paper
3. Sketch pens etc.

Procedure

1. Firstly draw a given fig on sheet of paper according to fig AB is parallel to CD and PQ is transversal line which intersects AB and CD with points M and N respectively.
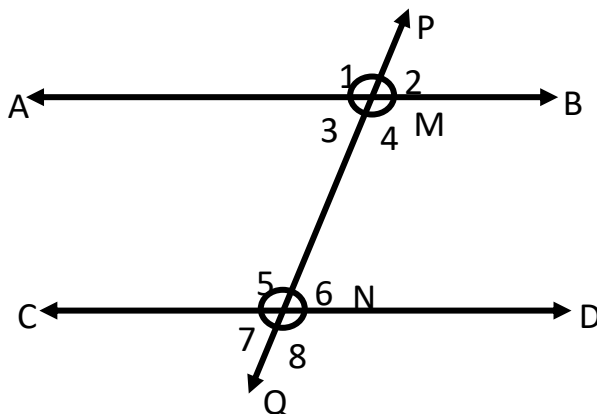
2. Now, we got angles. We will give them identify by naming from 1st to 8th it is shown in fig .
3. Measure all angles with the help of protector.

OBSERVATIONS

1. It is observed that ∠1 superimposes on ∠3 in a perfect manner.
2. Hence, ∠1 = ∠3 (alternate interior angles). If two parallel lines are cut by transversal, then each pair of alternate interior angles is equal.

MCQ

1. $\left(6 + \sqrt{27}\right) - \left(3 + \sqrt{3}\right) + \left(1 - 2\sqrt{3}\right)$ when simplified is:
   (a) positive and irrational   (b) negative and rational
   (c) positive and rational   (d) negative and irrational

2. Two rational numbers between 1/5 and 4/5 are:
   (a) 1 and 3/5   (b) 2/5 and 3/5   (c) 1/2 and 2/1   (d) 3/5 and 6/5

3. The value of $\sqrt[4]{(64)^{-2}}$ is :
   (a) $\frac{1}{8}$ (b) $\frac{1}{2}$ (c) 8   (d) $\frac{1}{64}$

4. The value of $\sqrt[4]{\sqrt[3]{2^2}}$ equal to:
   (a) $2^{-1/6}$ (b) 2^{-6} (c) $2^{1/6}$ (d) 2^6

5. Simplified value of $(25)^{1/3} \times (5)^{1/3}$ is:
   (a) 25   (b) 3   (c) 1   (d) 5

6. Simplified value of $(16)^{\frac{-1}{4}} \times \sqrt[4]{16}$ is:
   (a) 16   (b) 4   (c) 1   (d) 0

7. Simplify $\frac{13^{1/5}}{13^{1/3}}$
   (a) $13^{2/15}$ (b) $13^{8/15}$ (c) $13^{1/3}$ (d) $13^{-2/15}$

8. Theco-ordinates of the point which lies on y-axis at a distance of 4 units in negative direction of y – axis is
   (a) (0,4)   (b) (4, 0)   (c) (0, - 4)   (d) (- 4, 0)

9. Abscissa of a point is positive in:
   (a) I and II quadrant   (b) I and IV quadrant
   (c) I quadrant only   (d) IV quadrant only

10. The points (- 5, 2) and (2, - 5) lie in the:

(a) same quadrants (b) II and III quadrants respectively
(c) II and IV quadrants respectively (d) IV and III quadrants respectively

11. The distance of a point (0, - 3) from the origin is:
(a) 0 units (b) - 3 units (c) cannot be determined (d) 3 units

12. Which of the following points lie on the negative side of x – axis?
(a) (- 4, 0) (b) (- 3, 2) (c) (0, - 4) (d) (5, -7)

13. The complement of an angle m is:
(a) m (b) $90° + m$ (c) $90° – m$ (d) $m × 90°$

14. In fig below PQ‖ RS $\angle QPR = 70°\angle ROT = 20°$ find the value of x.
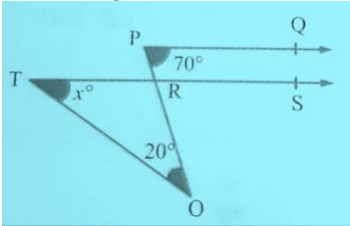
15. The angle which is equal to 8 times its complement is:
(a) 80 (b) 72 (c) 90 (d) 88

16. $\frac{p}{q}$ form of the number $0.\overline{3}$ is

(a) $\frac{3}{10}$ (b) $\frac{3}{100}$ (c) $\frac{1}{3}$ (d) $\frac{1}{2}$

17. The product of Quotient of a non-zero rational number with on irrational number is:
(a) irrational number (b) Rational number
(c) Whole number (d) Natural number

18. A rational number lying between $\sqrt{2}$ and $\sqrt{3}$ is:
(a) $\frac{\sqrt{2}+\sqrt{3}}{2}$ (b) $\sqrt{6}$ (c) 1.6 (d) 1.9

19. In fig given below AB and CD are parallel to each other.
The value of x is:
(a) $90°$
(b) $100°$
(c) $120°$
(d) $140°$
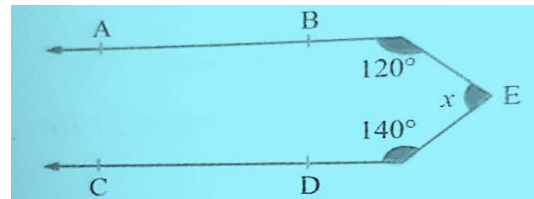
20. In fig below, value of x is
(a) $20°$
(b) $40°$
(c) $30°$
(d) $50°$
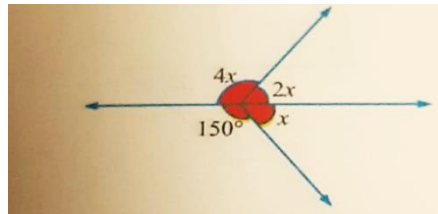
21. The things which are double of same thing are:
(a) equal (b) halves of same thing (c) unequal (d) double of the same thing

22. Euclid stated that all right angles are equal to each other in the form of:
(a) an axiom (b) a definition (c) a postulate (d) a proof

23. Which of the following needs a proof?
(a) Axiom (b) theorem (c) postulate (d) definion

24. How many number of line does pass through two distinct points?
(a) 1 (b) 2 (c) 3 (d) 4

25. A surface is that which has
(a) length and breadth (b) length only (c) breadth only (d) length and height