Puna International School
Shree Swaminarayan Gurukul, Zundal

Class - V

Mathematics

July month

Lesson plan

Year- 2020-21

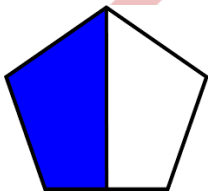# Ch- 4 Parts and Wholes

❖ <u>Summary :</u>

- Introduction

- Fill in the blanks

- Check whether the given fraction are equivalent or not

- Addition of fraction

- Subtraction of fraction

- Multiplication of fraction
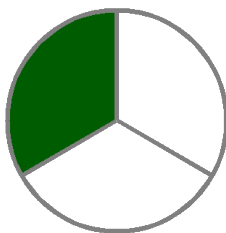
- Word problem

- Activity

❖ **Introduction:**

➢ **Define : fraction -** A fraction is a "part" of a "whole"
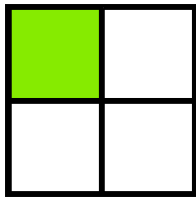
➢ **Examples :**

➢ **Half -** $\frac{1}{2}$ Two halves together make 1
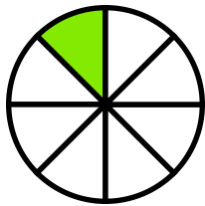

➢ **One third -** $\frac{1}{3}$ Three 'one third' together make 1

➢ **One forth -** $\frac{1}{4}$ Half of half is one forth

➢ **One eighth -** $\frac{1}{8}$ Half of one fourth is one eighth

❖ **Fill in the blanks.**

1) 25 paise is **¼** part of one rupee.

2) 10 paise is **1/10** part of one rupee.

3) 25 minutes is **5/12** part of one hour.

4) 12 hours is **½** part of one day.

5) 2 months is **1/6** part of one year.

6) 7 months is **7/12** part of one year.

7) ¼ of Rs.1 = **25 paise**.

8) 1/3 of Rs. 150 = Rs. **50**

9) 50 seconds = **5/6** of a minute.

10) 1/7 of 2100g = **3/10** of 1 kg.

❖ Check whether the given fraction is equivalent or not.

1) $\dfrac{7}{14}$ and $\dfrac{5}{10}$

Solve: $\dfrac{7}{14} = \dfrac{1}{2}$, $\dfrac{5}{10} = \dfrac{1}{2}$

So, both fractions are equivalent.

2) $\dfrac{5}{55}$ and $\dfrac{11}{121}$

Solve: $\dfrac{5}{55} = \dfrac{1}{11}$, $\dfrac{1}{121} = \dfrac{1}{11}$

So, both fractions are equivalent.

3) $\dfrac{8}{13}$ and $\dfrac{6}{11}$

Solve: $\dfrac{8}{13} \neq \dfrac{6}{11}$

So, both fractions are not equivalent.

4) $\dfrac{10}{14}$ and $\dfrac{25}{35}$

Solve: $\dfrac{10}{14} = \dfrac{5}{7}$, $\dfrac{25}{35} = \dfrac{5}{7}$

So, both fractions are equivalent.

5) $\dfrac{5}{9}$ and $\dfrac{13}{9}$

Solve: $\dfrac{5}{9} \ne \dfrac{13}{9}$

So, both fractions are not equivalent.

❖ **Addition of fraction:**

1) $\dfrac{3}{4} + \dfrac{9}{4} = \dfrac{3+9}{4} = \dfrac{12}{4} = 3$

2) $\dfrac{3}{7} + \dfrac{4}{5} = \dfrac{3 \times 5 + 4 \times 7}{5 \times 7} = \dfrac{15+28}{35} = \dfrac{43}{35}$

3) $\dfrac{1}{2} + \dfrac{5}{8} = \dfrac{1 \times 8 + 5 \times 2}{2 \times 8} = \dfrac{8+10}{16} = \dfrac{18}{16} = \dfrac{9}{8}$

4) $\dfrac{3}{5} + \dfrac{1}{8} = \dfrac{3 \times 8 + 1 \times 5}{5 \times 8} = \dfrac{24+5}{40} = \dfrac{29}{40}$

❖ **Subtraction of fraction:**

1) $\dfrac{3}{2} - \dfrac{1}{2} = \dfrac{3-1}{2} = \dfrac{2}{2} = 1$

2) $\dfrac{18}{5} - \dfrac{11}{5} = \dfrac{18-11}{5} = \dfrac{7}{5}$

3) $\dfrac{94}{3} - \dfrac{29}{3} = \dfrac{94-29}{3} = \dfrac{65}{3}$

4) $\dfrac{8}{3} - \dfrac{5}{6} = \dfrac{8\times6-5\times3}{3\times6} = \dfrac{48-15}{18} = \dfrac{33}{18} = \dfrac{11}{6}$

❖ **Multiplication of fraction :**

1) $\dfrac{3}{5} \times \dfrac{4}{6} = \dfrac{3\times4}{5\times6} = \dfrac{12}{30} = \dfrac{2}{5}$
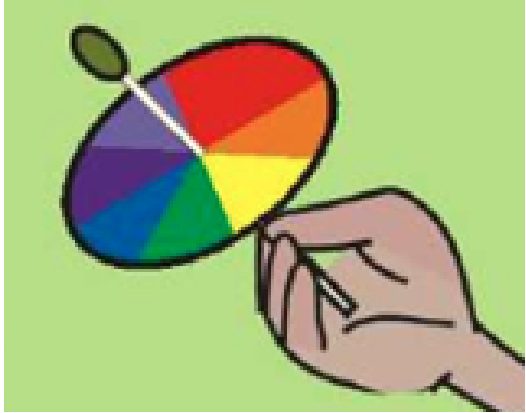
2) $\dfrac{8}{3} \times \dfrac{7}{4} = \dfrac{8\times7}{3\times4} = \dfrac{56}{12} = \dfrac{14}{3}$

3) $\dfrac{15}{4} \times \dfrac{2}{7} = \dfrac{15\times2}{4\times7} = \dfrac{15}{14}$

4) $\dfrac{12}{5} \times \dfrac{6}{7} = \dfrac{12\times6}{5\times7} = \dfrac{72}{35}$

❖ **Activity :**

Make magic top from text book (page no. 52)

Paste different countries flag in notebook to show part and whole:

Ch- 5 Does it look the same?
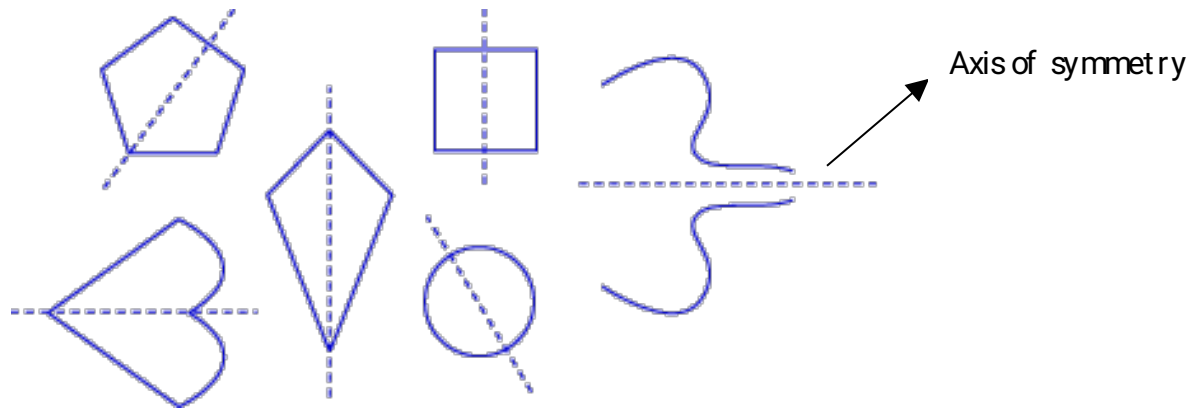
❖ <u>Summary:</u>

- Introduction

- Symmetry of shapes

- Symmetry of alphabets

- Symmetry of numbers

- Type of symmetry

- Figure with more than one line symmetry

- Look at the figures and draw its shapes after half turn and one fourth turn.
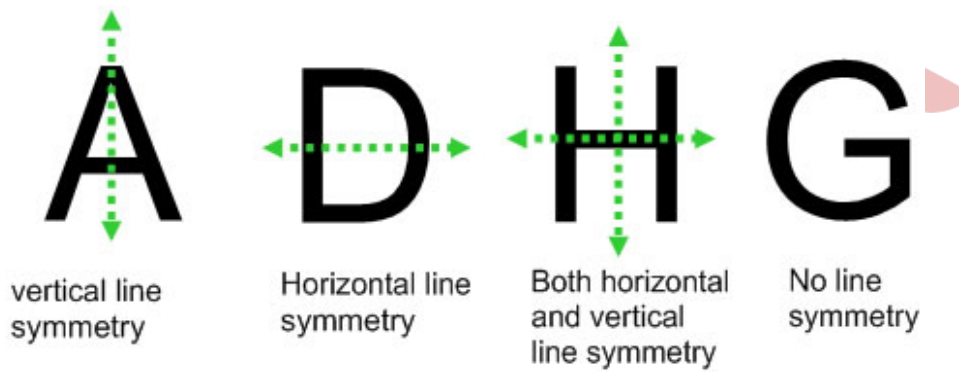
- Multiple choice questions.

❖ **Introduction:**

- **Line of symmetry –** A line dividing a figure into two identical parts is called the line of symmetry.

❖ **Shapes symmetry :**

Axis of symmetry

❖ **Symmetry of alphabets:**

vertical line symmetry

Horizontal line symmetry

Both horizontal and vertical line symmetry

No line symmetry

- **One line of symmetry:**

  K, M, T, U, V, W, Y

❖ **Two line of symmetry:**

  H, I, X

❖ **No line of symmetry:**

  F G J L N P Q R S Z

❖ **Symmetry of number:**

IO8

Symmetric about this axis
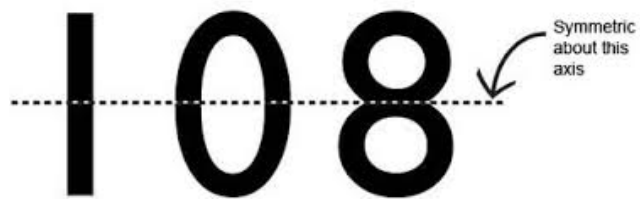
❖ **No line of symmetry :**

1, 2, 4, 5,6,7,9

❖ **Types of symmetry:**

1. Vertical line symmetry

2. Horizontal line symmetry

3. Oblique line symmetry

❖ **Figure with more than one line symmetry :**

a. **Equilateral triangle :** 3 line of symmetry
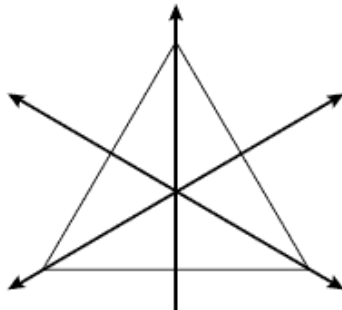
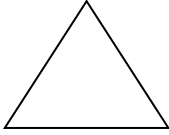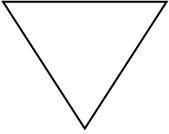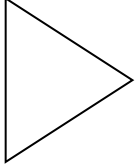

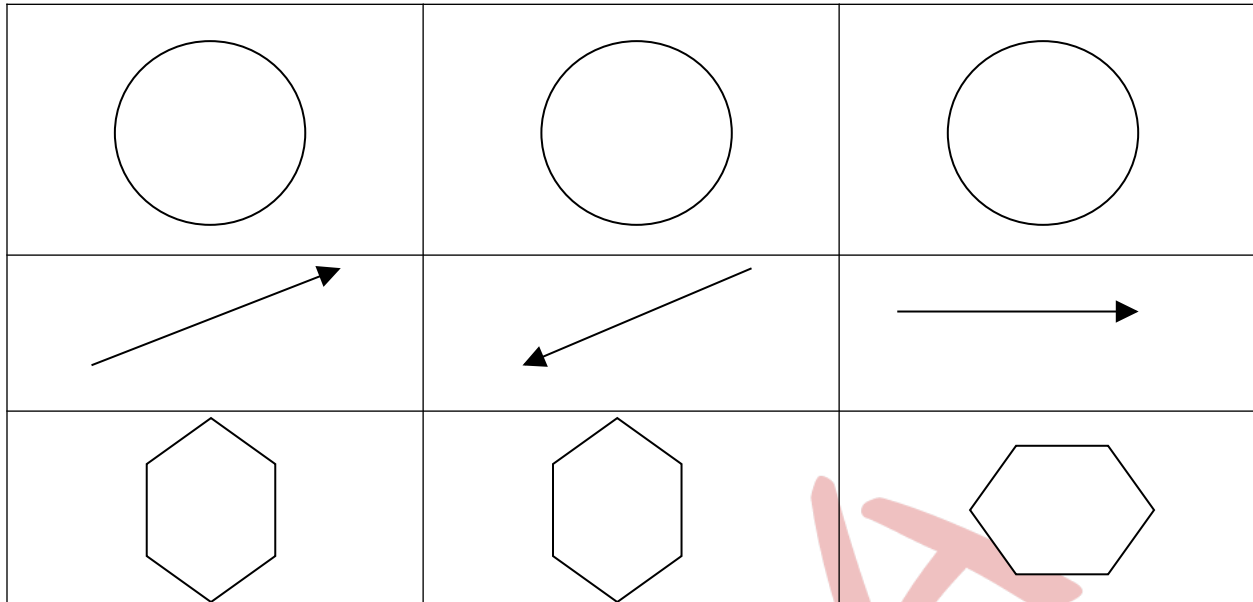a. **Square :** 4 line of symmetry
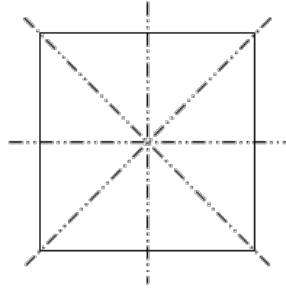
b. **A regular pentagon :** 5 line of symmetry
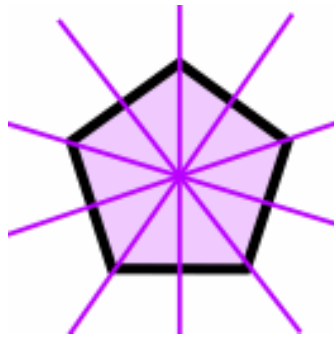
c. **A circle:** Infinite lines of symmetry
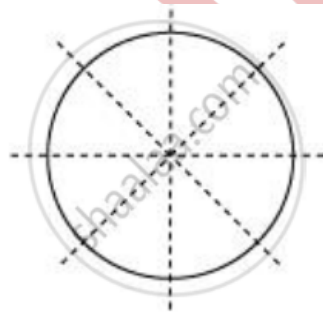
❖ **Look at the figure and draw its shape after half turn and one fourth turn.**

Draw	Half	$\frac{1}{4}$ turn

❖ **Multiple choice questions :**

1) **How many lines of symmetry does a CD have?**

   a. 1 lines b. 2 lines c. 3 lines

2) **Which of the following figures have exactly three lines of symmetry?**

   a. Equilateral triangle

   b. Circle

   c. Regular pentagon

3) **Which of the following words is made of letters having only horizontal line symmetry?**

   a. MET   b. HAT   **c. BED**

4) **How many lines of symmetry does a rectangle have?**

   a. 1 **b. 4** c. 2

5) **Which of the following letters does not any line of symmetry?**

   a. H   b. V   **c. Z**

❖ **Activity :**

Make different type of shapes which look same after one third turn and one sixth turn.

Class - V

Mathematics

August month

Lesson plan

Year - 2020-21

Ch- 6 Be My Multiple, I'll be Your Factor

❖ **Summary:**

- Multiples of numbers

- Common multiples

- Prime factor

- Highest common factor

- Lowest common factor

- Make the factor tree

- Word problems

❖ **Multiples of numbers:**

1) **Write the first four multiples of 3.**

    Sol. 3×1=3, 3×2=6, 3×3=9, 3×4=12

    The first four multiples of 3 are 3, 6, 9 and 12.

2) **Write the first six multiples of 2.**

    Sol. 2, 4, 6,8,10 and 12

    The first six multiples of 2 are 2, 4, 6, 8, 10 and 12.

3) **Write the first seven multiples of 4.**

    Sol. 4, 8, 12, 16, 20, 24 and 28

    The first seven multiples of 4 are 4, 8, 12, 16, 20, 24 and 28.
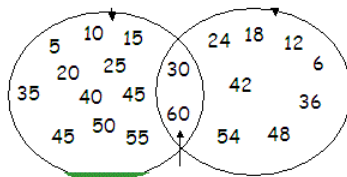
4) **Write the first five multiples of 5.**

    Sol. 5, 10, 15, 20 and 25

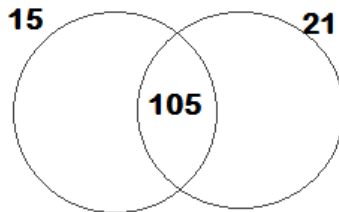The first five multiples of 5 are 5, 10, 15, 20 and 25

❖ **Common multiples: [less than 5 common multiples]**
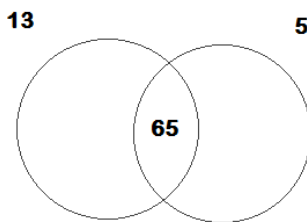
1) **5 and 6**

The common multiples of 5 and 6 are 30 and 60.

2) **15 and 21**

The common multiple of 15 and 21 is 105.

3) **13 and 5**

The common multiple of 13 and 5 is 65.

4) **3 and 5**

The common multiples of 3 and 5 are 15, 30, and 45.

5) **4,6 and 5**

The common multiples of 4, 6 and 5 are 60.

❖ **Prime Factor :**

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

❖ **Highest common factors [H.C.F] :**

1) **Find the HCF of 20 and 30 :**

Solve: The prime factorization of 20 $=2\times2\times5$

The prime factorization of 30 $=2\times3\times5$

The common factors from both the numbers = 2×5=10

2) Find the HCF of 360 and 540 :

Solve:

2	360
2	180
2	90
3	45
3	15
5	5
	1

2	540
2	270
3	135
3	45
3	15
5	5
	1

360 = 2×2×2×3×3×5

540 = 2×2×3×3×3×5

H.C.F = 2×2×3×3×5 = 180

3) Find the HCF of 25 and 40 :

Solve:

5	25
5	5
	1

2	40
2	20
2	10
5	5
	1

25 = 5×5

40=2×2×2×5

H.C.F = 5

4) Find the H.C.F of 210 and 480 :

Solve:

2	210
3	105
5	35
7	7
	1

2	480
2	240
2	120
2	60
2	30
3	15
5	5
	1

210 = 2×3×5×7

480 = 2×2×2×2×2×3×5

H.C.F = 2×3×5 = 30

❖ Lowest common multiple : [Prime factor]

1) Find L.C.M of 4 and 6

Solve:

2	4	6
2	2	3
3	1	3
	1	1

L.C.M = 2×2×3 = 12

2) Find L.C.M of 24 and 36 :

Solve:

2	24	36
2	12	18
2	6	9
3	3	9
3	1	3
	1	1

L.C.M= 2×2×2×3×3=72

3) Find L.C.M of 12 and 32 :

Solve:

2	12	32
2	6	16
2	3	8
2	3	4
2	3	2
3	3	1
	1	1

L.C.M =2×2×2×2×2×3 =96

4) Find L.C.M of 48 and 60 :

Solve:

2	48	60
2	24	30
2	12	15
2	6	15
3	3	15
5	1	5
	1	1

L.C.M. =2×2×2×2×3×5 =240

❖ Make a factor tree:

1) 42

Solve:

```
        42
       /  \
      2    21
      |   /  \
      2  3    7
```
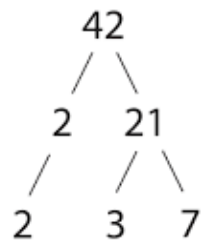
42= 2×3×7

2) 36

Solve:

```
      36
     /  \
    2    18
        /  \
       2    9
            / \
           3   3
```
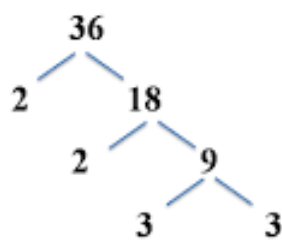
36= 2×2×3×3

3) 16
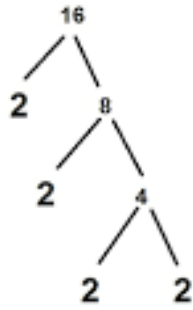
Solve:

16= 2×2×2×2

4) 240

Solve:
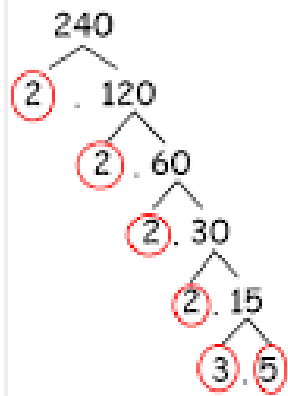
240= 2×2×2×2×3×5

❖ Activity :

- Make a Venn diagram using your mother's bangle and show multiples of 4,5 and 6 in the circle :
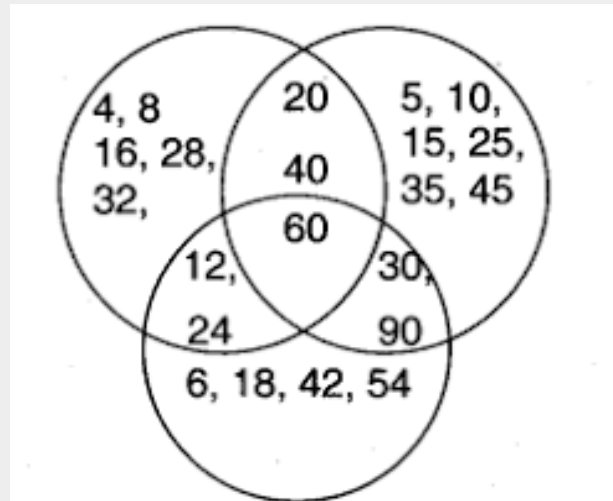
Ch- 7 Can you see the pattern?

❖ <u>Summary :</u>

- Complete the pattern

- Fill in the blanks

- Magic Hexagon

- Magic square

- Activity

❖ **Complete the pattern :**

❖ Fill in the blanks:

14 (star) + 34 (square) + 20 (circle) = 34 (square) + 14 (star) + 20 (circle)

80 (hexagon) + 42 (flower) + 65 (diamond) = 65 (diamond) + 42 (flower) + 80 (hexagon)

200 + 300 + 400 = 200 + 400 + 300

10 (triangle) + 40 (parallelogram) + 50 (pentagon) = 50 (pentagon) + 10 (triangle) + 40 (parallelogram)

24 (star) + 19 (pentagon) + 37 (diamond) = 37 (diamond) + 24 (star) + 19 (pentagon)

215 (oval) + 120 (diamond) + 600 (rectangle) = 600 (rectangle) + 215 (oval) + 120 (diamond)

48 × 13 = 13 × 48

❖ Magic hexagon:

14

a)

Solve:

- 9×11 = 99

- 11×6=66

- 17×6=102

- 17×7=119

- 108÷9=12

- 12×7=84

b)
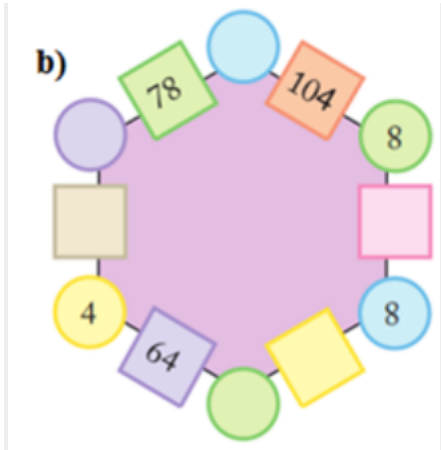
Solve:
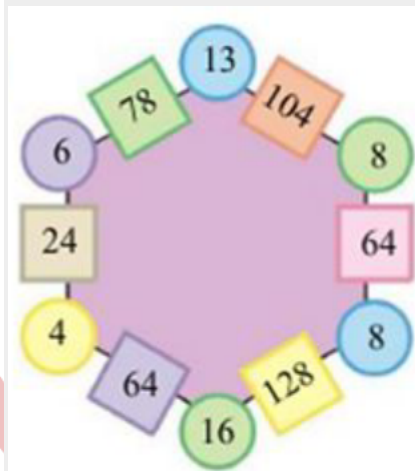
- 104÷8 = 13

- 78÷13=6

- 6×4=24

- 64÷4=16

- 16×8=128

- 8×8=64

❖ Magic Square:

• Fill this square using all the numbers from 46 to 54. Rule: The total of each line is 150.

		49
46		
	52	47

Answer:

53	48	49
46	50	54
51	52	47

150 − (49+47) = 54

150- (54+47) = 51

150- (51+46) = 53

150- (53+49) = 48

150- (46+54) = 50

- Fill this square using all the numbers from 21 to 29. Rule: The total of each side is 75.

	25	

Answer:

24	23	28
29	25	21
22	27	26

75- (25+21) = 29

75- (29+22) = 24

75- (24+23) =28

75- (28+21) = 26

75- (26+22) = 27

- Fill this square using all the numbers from 6 to 14. Rule: The total of each side is 30.

13		11
		7
	10	

Answer:

13	6	11
9	14	7
8	10	12

30- (11+13) = 6

30- (11+7)=12

30- (12+10) =8

30- (13+8) =9

30- (9+7) =14

❖ Activity :

Number surprises

a) Ask your friend — Write down your age. Add 5 to it. Multiply the sum by 2. Subtract 10 from it. Next divide it by 2. What do you get? Is your friend surprised?

b)

☆ Take a number ⬡

☆ Double it ⬡ × 2 ⬡

☆ Multiply by 5 ⬡ × 5 ⬡

☆ Divide your answer by 10 ⬡ ÷ 10 ⬡

c)

☆ Take a number ⬡

☆ Double it ⬡ × 2 = ⬡

☆ Again double it ⬡ × 2 = ⬡

☆ Add the number you took first to the answer ⬡ + ⬡ = ⬡

☆ Now again double it ⬡ × 2 = ⬡

☆ Divide by 10 ⬡ ÷ 10 = ⬡