

NEW ERA PUBLIC SCHOOL KASBAGH SRINAGAR

SUBJECT 1 - MATHS - A/B

CLASS:- 6TH

UNIT:- 2ND

Solved ASSIGNMENT OF UNIT 2ND (2021-2022)

CHAPTER:- 03 [HCF AND LCM]

RECAP Exercise
Q=1 write the factors of the following

(a) 16

Solution Factors of 16 $\rightarrow$ 1×16 , 2×8 , 4×4

So 1, 2, 4, 8 and 16 are factors.

(c) 36

Solution Factors of 36 $\rightarrow$ 1×36 , 2×18 , 3×12 , 4×9 , 6×6 , 12×3 ,
 18×2 .

So 1, 2, 3, 4, 6, 12, 18, 36 are factors.

Q=2 write the first four multiples of the following:

(a) 12

Solution 12, 24, 36, 48

(c) 19

Solution 19, 38, 57, 76

Q=3 write the factors of the following:

(a) 93

Solution Factors of 93 $\rightarrow$ 1×93 , 3×31

So, 1, 3, 31, 93 are factors.

(c) 121

Solution Factors of 121 $\rightarrow$ 1×121 , 11×11 , 121×1

So, 1, 11 and 121 are factors.

Q=4 write the common factors of:

(a) 24, 36

Solution The factors of 24 are ①, ②, ③, ④, ⑥, ⑫, 24

The factors of 36 are ①, ②, ③, ④, ⑥, ⑨, ⑫, 18, 36

Thus the common factors are 1, 2, 3, 4, 6, 12

Q=5 Do you self

Q=6 Is 32 a factor of 3584?

Solution $3584 \div 32 = 112$, Remainder = 0

As remainder is 0, 32 is a factor of 3584 $\Rightarrow$

Rough

$$\begin{array}{r} 32 \overline{) 3584} \quad 112 \\ \underline{32} \\ 38 \\ \underline{32} \\ 64 \\ \underline{64} \\ 0 \end{array}$$

Q=7 Is 368 a multiple of 46?

Solution As remainder is 0, 46 is a factor of 368

Rough

$$\begin{array}{r} 46 \overline{) 368} \quad 8 \\ \underline{368} \\ 0 \end{array}$$

Q=8 Write the two next multiples of 19.

Solution The next two multiples of 19 are 38 and 57

$$\frac{19 \times 2}{38}, \frac{19 \times 3}{57}$$

$\approx 0 \approx$

Exercise 3.1

Q=1 Write four pairs of Twin prime numbers.

Solution Four pairs of Twin prime numbers are
(3, 5), (5, 7), (11, 13), (17, 19)

Q=2 Write four pairs of Co-prime numbers.

Solution Four pairs of Co-prime numbers are
(2, 3), (3, 4), (4, 5), (5, 6)

Q=3 Find whether the first number is a factor of the second number or not.

(a) 16, 45

Solution $45 \div 16 = 2$, Remainder 13

As remainder is not 0, 16 is not a factor of 45

(c) 13, 78

Solution $78 \div 13 = 6$, Remainder = 0

As remainder is 0 So, 13 is a factor of 78

Rough

$$\begin{array}{r} 13 \overline{) 78} \quad 6 \\ \underline{78} \\ 0 \end{array}$$

Q=4 Express each of the following as the sum of three prime numbers.

(a) 23

(c) 59

Solution $23 = 5 + 7 + 11$ Solution $59 = 17 + 19 + 23$

Q=5 How many prime numbers are there from 1 to 100?

Solution Numbers 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97 are 25 prime numbers between 1 to 100.

Q=6 How many even prime numbers are there in the set of natural numbers.

Solution Only one even number (Prime number) are in the set of natural numbers i.e. (2)

Q=7 The sum of two odd numbers makes an even number. Write five such numbers.

Solution:- $[3+5=8]$, $[5+7=12]$, $[7+9=16]$, $[9+11=18]$
 $[11+13=24]$

Q=8 Is 34212 a multiple of 12?

Solution:- Yes, $[2851 \times 12 = 34212]$

Q=9 Express 120 as the product of prime numbers.

Solution:- $120 = 2 \times 2 \times 2 \times 3 \times 5$

Q=10 Find a number whose sum of the digits and product of the digits are same.

Solution:- $[1+2+3=6]$; $[1 \times 2 \times 3=6]$

Thus the number is 6

[NOTE:- Rest of the parts do yourself]

Exercise 3.2

Q=1 Test the divisibility of the following numbers by 2.

(a) 562820

Solution 562820 ends with 0 so it is exactly divisible by 2.

(b) 46145

Solution 46145 ends with 5, so it is not exactly divisible by 2.

Q=2 Test the divisibility of the following numbers by 3.

(a) 74912

Solution $7+4+9+1+2=23$, since 23 is not exactly divisible by 3, so 74912 is not exactly divisible by 3.

Q=3 Test the divisibility of the following numbers by 6.

(a) 34920

Solution 0 is exactly divisible by 2 and the sum of digits $(3+4+9+2+0=18)$ is exactly divisible by 3, so, the number 34920 is exactly divisible by 6.

Q=4 Test the divisibility of the following numbers by 4.

(a) 24756

Solution 24756 is divisible by 4 since the last two digits of the number that is 56 is exactly divisible by 4.

Q=5 Do your self Q=6 Do your self Q=7 Do your self

Q=8 Test the divisibility of the following by 11

(a) 3 8 0 1 6

Solution In 38016 the sum of digits at odd places is $3+0+6=9$, the sum of digits at even places is $8+1=9$. Their difference is $9-9=0$ so the number is exactly divisible by 11.

Q=9 Do your self

Q=10 Do your self.

Exercise 3.3

Q=1 write the prime factors of the following numbers:

(a) $216 = 2 \times 2 \times 2 \times 3 \times 3 \times 3$

(c) $372 = 2 \times 2 \times 3 \times 31$

Solution

$$\begin{array}{r}
 2 \overline{) 216} \\
 \underline{2 } 108 \\
 2 \overline{) 108} \\
 \underline{2 } 54 \\
 3 \overline{) 54} \\
 \underline{3 } 27 \\
 3 \overline{) 27} \\
 \underline{3 } 9 \\
 3 \overline{) 9} \\
 \underline{3 } 3 \\
 3 \overline{) 3} \\
 \underline{3 } 0
 \end{array}$$

Solution

$$\begin{array}{r}
 2 \overline{) 372} \\
 \underline{2 } 186 \\
 3 \overline{) 186} \\
 \underline{3 } 93 \\
 3 \overline{) 93} \\
 \underline{3 } 31
 \end{array}$$

Q=2 Find the common factors of the following pairs of numbers.

(a) 44, 72

Sol: The factors of 44 are $\rightarrow 1, 2, 4, 11$ The factors of 72 are $\rightarrow 1, 2, 3, 4, 6, 8, 9, 72$ $\therefore$ The common factors are 1, 2, 4

Q=3 Find the HCF of the following numbers using the prime factorisation method.

(b) 27 and 102

Solution: The factors of 27 are $= 3 \times 3 \times 3$ The factors of 102 are $= 2 \times 3 \times 17$ $\therefore$ HCF of 27 & 102 = 3

Q=4 Find the HCF of the following using long division method.

(a) 575, 920

Soln:

Hence HCF of 575 & 920 is 115

[NOTE: Rest of the pairs do your self]

Rough

$$\begin{array}{r}
 575 \overline{) 920} 1 \\
 \underline{575} \\
 345 \overline{) 575} 1 \\
 \underline{345} \\
 230 \overline{) 345} 1 \\
 \underline{230} \\
 115 \overline{) 230} 2 \\
 \underline{230} \\
 0
 \end{array}$$

Q=5 Find the greatest number which can divide 36, 81 and 108

Solution:-

$$\begin{array}{r} 36 \overline{) 81} \quad | 2 \\ \underline{72} \\ 9 \overline{) 36} \quad | 4 \\ \underline{36} \\ \times \end{array}$$

$$\begin{array}{r} 9 \overline{) 108} \quad | 12 \\ \underline{90} \\ \times \end{array}$$

Greatest number which can divide 36, 81 & 108 is 9

Q=6 Find the greatest number which can divide 89, 53 and 77 leaving remainder 5 in each case.

Solution:- Since 5 is the remainder in each case.

$$\therefore 89-5=84, \quad 53-5=48, \quad 77-5=72$$

Thus the required number must be HCF of 84, 48 & 72

$$\begin{array}{r} 48 \overline{) 84} \quad | 1 \\ \underline{48} \\ 36 \overline{) 48} \quad | 1 \\ \underline{36} \\ 12 \overline{) 36} \quad | 3 \\ \underline{36} \\ \times \end{array}$$

$$\begin{array}{r} 12 \overline{) 72} \quad | 6 \\ \underline{72} \\ \times \end{array}$$

$\therefore$ Greatest number which can divide 89, 53, 77

is 12 leaving remainder 5 in each case.

Q=7 Find the greatest number which can divide 78, 230, 682 leaving remainders 3, 5 and 7 respectively.

Solution:- The greatest number which can divide 78, 230 & 682 leaving remainders 3, 5 & 7 respectively is 75.

$$\therefore [78-3=75], [230-5=225], [682-7=675]$$

HCF of 75, 225 & 675

$$\begin{array}{r} 75 \overline{) 225} \quad | 3 \\ \underline{225} \\ \times \end{array}$$

$$\begin{array}{r} 75 \overline{) 675} \quad | 9 \\ \underline{675} \\ \times \end{array}$$

Q=8 - Do your self Q=9 Do your self Q=10 Do your self
[NOTE:- Rest of the parts do your self]

Exercise 3.4

Q=1 Find the LCM of the following by the prime factorization method.

(a) 12, 42

Prime factorization of 12 = $2 \times 2 \times 3$
 Prime factorization of 42 = $2 \times 3 \times 7$

2	12	2	42
2	6	3	21
3		7	7

Rough.

The required LCM = $2 \times 3 \times 2 \times 7 = 6 \times 14 = 84$

Q=2 Find the LCM of the following by division method.

(a) 24, 27, 30, 90

$$\begin{aligned} \text{LCM of } 24, 27, 30 \text{ \& } 90 &= 2 \times 3 \times 3 \times 5 \times 4 \times 3 \\ &= 6 \times 15 \times 12 \\ &= 1080 \end{aligned}$$

Rough	
2	24, 27, 30, 90
3	12, 27, 15, 45
3	4, 9, 5, 15
5	4, 3, 5, 5
	4, 3, 1, 1

Q=3 Find the two common multiples of the following nos.

(a) 3, 4

The multiples of 3 are = 3, 6, 9, 12, 15, 18, 21, 24, 27

" " " 4 are = 4, 8, 12, 16, 20, 24, 28, 32

$\therefore$ The first two common multiples are 12 & 24.

Q=4 Find the HCF and LCM of the following pairs of numbers.
 Also show that the product of the HCF and LCM is the same as the product of the given pair of nos.

(a) 13, 52

Sol. HCF of 13 & 52 = 13
 LCM of 13 & 52 = $13 \times 4 = 52$

Product of 13 & 52 = 676

Product of LCM & HCF = $13 \times 52 = 676$

$\therefore$ Product of HCF & LCM = Product of nos
 Relationship verified

Rough.	
13	52 4
	52
	HCF = 13
	LCM = 52
13	13, 52
4	1, 4
	LCM = $13 \times 4 = 52$

Q=5 The product of two numbers is 800 and their LCM is 400.
Find their HCF.

Solution

Product of two numbers = LCM $\times$ HCF

$$800 = 400 \times \text{HCF}$$

$$\text{HCF} = \frac{800}{400} = \frac{8}{4} = 2$$

$$\text{HCF} = 2$$

Q=6 The product of two numbers is 2880 and their HCF is 12. Find their LCM.

Solution

Product of two numbers = LCM $\times$ HCF

$$2880 = \text{LCM} \times 12$$

$$\begin{array}{r} 720 \\ 12 \overline{) 2880} \\ \underline{1440} \\ 1440 \\ \underline{1440} \\ 0 \end{array} \quad \frac{2880}{12} = \text{LCM}$$

$$\text{LCM} = \frac{2880}{12} = 240 \Rightarrow \text{LCM} = 240$$

Q=7 do your self Q=8 do your self.

Q=9 Find the greatest 5-digit number that is exactly divisible by 15, 18 & 24.

Solution We find the LCM of 15, 18 & 24.

$$\text{LCM of } 15, 18 \text{ \& } 24 = 360$$

The greatest 5-digit number is 99999

we find that when 99999 is divided by 360 the remainder is 279.

$\therefore$ The greatest 5-digit number which is exactly divisible by 360 = 99999 - 279

$$= 99720$$

that is exactly LCM

$$\begin{array}{r} 3 \overline{) 15, 18, 24} \\ 2 \overline{) 5, 6, 8} \\ \underline{15, 3, 4} \end{array}$$

$$\text{LCM} = 3 \times 2 \times 5 \times 3 \times 4$$

$$\text{LCM} = 360$$

$$\begin{array}{r} 360 \overline{) 99999} \quad 279 \\ \underline{720} \\ 2799 \\ \underline{2520} \\ 2799 \\ \underline{2520} \\ 279 \end{array}$$

$$\text{Remainder} = 279$$

Q=10 do your self.

[NOTE :- Rest of the parts do your self]

CHAPTER → 4 → (NATURAL NUMBERS & WHOLE NO'S)

RECAP EXERCISE

Q=1 which number should be multiplied with 9 to get the product of 900?

Solution 100 $[9 \times 100 = 900]$

Q=2 Find the difference between the largest 5-digit no. and the smallest 6-digit number.

Solution Smallest 6-digit number = 100000
Largest 5-digit number = $\begin{array}{r} 99999 \\ - 00000 \\ \hline 99999 \end{array}$

$\Rightarrow 01$

Q=3 Do your self.

Q=4 The cost of 10 pens is Rs 200. what will be the cost of 7 such pens?

Solution Cost of 10 pens = Rs 200
Cost of 1 pen = $\frac{200}{10} = 20$

Cost of 1 pen = Rs 20

$\therefore$ Cost of 7 pens = Rs 20×7
= Rs 140

Q=5 & Q=6 Do your self

Q=7 On dividing 400 by 16, what will be the remainder?

Solution
$$\begin{array}{r} 16 \overline{) 400} \quad 25 \\ \underline{32} \\ 80 \\ \underline{80} \\ 0 \end{array}$$

Remainder = 0

Q=8 In a company every employee gets a salary in 5 digits. what can be the maximum salary of an employee here.

Solution 99,999

Q=9 Do your self

Q=10 Do your self.

Exercise 4.1

Q=1 On Book. Match each of the following with the appropriate property.

Solution On Book.

Q=2 Fill in the blanks.

Solution On Book.

Q=3 Use an appropriate property to compute each of the following:

(a) 95×102

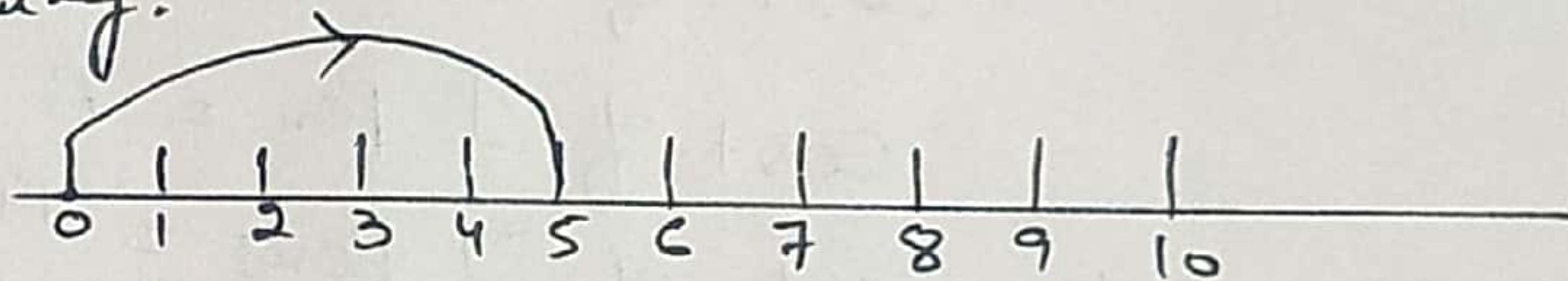
Solution $95 \times (100 + 2)$
Distributive Property
 $= 95 \times 100 + 95 \times 2$
 $= 9500 + 190$
 $= 9690$

(c) $(8 \times 6) + (8 \times 4)$

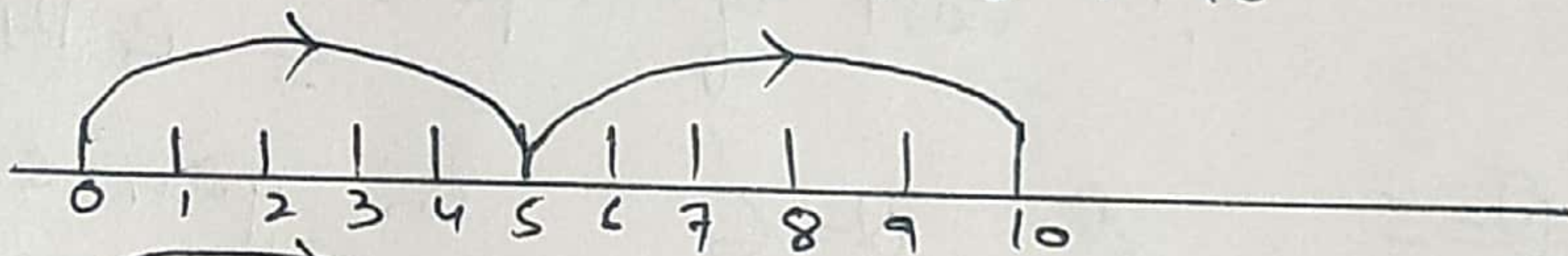
Solution $8 \times (6 + 4)$
Distributive Property
 $= 8 \times 10$
 $= 80$

Q=4 Draw a number line from 0 to 10 and show the result of the following:

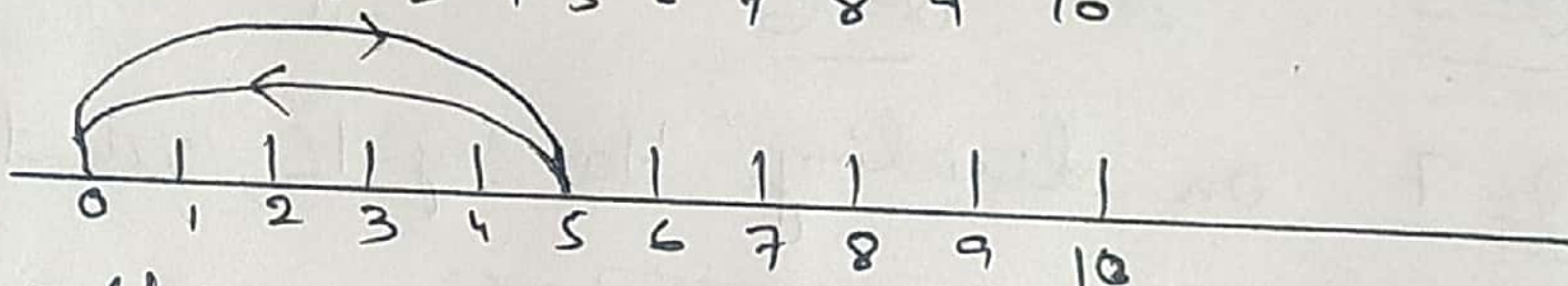
(a) $5 \times 1 = 5 \Rightarrow$ solt



(b) $5 + 5 = 10 \Rightarrow$



(c) $5 - 5 = 0 \Rightarrow$



Q=5 Do your self.

Q=6 What is the difference between additive identity and multiplicative identity?

Solution Multiplicative identity = 1
Additive identity = 0
Difference = $1 - 0 \Rightarrow 1$

Q=7 Do your self.

Q=8 Give an example to show that $(a-b)-c \neq a-(b-c)$

Solution $(a-b)-c \neq a-(b-c)$

Here $a=40$, $b=10$ & $c=5$

$$(40-10)-5 \neq 40-(10-5) \Rightarrow 30-5 \neq 40-(5)$$

$$30-5 \neq 40-5 \Rightarrow 25 \neq 35$$

Q=9 Do your self Q=10 Do your self Q=11 Do your self.

Q=12, Q=13, Q=14, Q=15 Do your self (self)

[Note:- Rest of the Parts do your self]

CHAPTER - 12 → UNDERSTANDING ELEMENTARY SHAPES

CLASS :- 6TH

MATH :- B

UNIT :- 2ND

RECAP Exercise

Q=1 Can we draw 1m long line segment on this page?

Solution:- No

Q=2 Based on the given picture, find the length of the pencil.

Solution:- Figure on BOOK 12cm

Q=3 How many lines can be drawn passing through a given point?

Solution:- We can draw infinite lines passing through a given point.

Q=4 How many lines can be drawn passing through Two give points?

Solution:- Only one.

Q=5 At what time will two hands of a clock make a straight

Solution:- 6' O' clock

Q=6 What is the name of the longest line can be drawn inside a square?

Solution:- Diagonal

Q=7 How many lines can be drawn between any two points?

Soluti Only One.

Q=8 Two lines are meeting at one point, can they meet at any point if extended further?

Soluti:- No.

Q=9 How many angles does a triangle have?

Soluti 3 angles.

Q=10 In the clock shown along side, the time is 3 o'clock. Tell any other time when these two hands make the similar angle

Soluti figure on Book. [9 o'clock]

$\approx \circ \approx$

Exercise 12.1

Q=1 By observation, Identify the following angles as right angles, acute angles, or straight angles.

(a) figure on Book

Soluti Acute angle = $\angle FOE, \angle EOD, \angle DOC, \angle COB, \angle BOA$

Straight angle = $\angle EOA$

(b) figure on Book

Soluti Acute angle = $\angle COA, \angle BOD, \angle EOB, \angle EOD$

Straight angle = $\angle COD, \angle AOB$

Q=2 Based on the figure given below, write the measurements of the following angles:

Soluti Figure on Book

$$\angle ACJ = \frac{53^\circ}{}$$

$$\angle ACE = \frac{90^\circ}{}$$

$$\angle ACD = \frac{135^\circ}{}$$

$$\angle ACH = \frac{39^\circ}{}$$

$$\angle ACF = \frac{100^\circ}{}$$

$$\angle DCB = \frac{45^\circ}{}$$

Q=3 Do your self.

Q=4 Show the time in the given clocks according to the angles mentioned below:

- (a) figure on Book $\rightarrow 0^\circ \rightarrow$ 12 Noon or 12 midnight
 (b) figure on Book $\rightarrow 90^\circ \rightarrow$ 3 o'clock.
 (c) figure on Book $\rightarrow 180^\circ \rightarrow$ 6 o'clock.

Q=5 Do your self Q=6 Do your self.

Q=7 classify the following angles as acute, obtuse, reflex or complete.

- (a) $27^\circ \rightarrow$ acute angle (c) $45^\circ \rightarrow$ acute angle

Q=8 Do your self.

Exercise 12.2

Q=1 classify each of the following triangles as Scalene, Isosceles or equilateral.

- (a) figure on Book $\rightarrow$ Scalene (c) figure on book $\rightarrow$ Isosceles
 (e) figure on Book $\rightarrow$ Isosceles (f) figure on book $\rightarrow$ Scalene

Q=2 classify each of the following as an acute, an obtuse or a right-angled triangle: (figures on Book)

- Solution (a) right angled triangle (c) acute angled triangle
 (e) right angled triangle (f) obtuse angled triangle

Q=3 Do your self

Q=4 classify each of the following triangles as Scalene, Isosceles or equilateral:

- (a) 7cm, 7cm, 7cm $\rightarrow$ Solution $\rightarrow$ Equilateral triangle
 (c) 4cm, 4cm, 6cm $\rightarrow$ Solution $\rightarrow$ Isosceles triangle
 (e) 4.8cm, 4.8cm, 4.8cm $\rightarrow$ Solution $\rightarrow$ Equilateral triangle
 (f) 5.6cm, 5.6cm, 7cm $\rightarrow$ Solution $\rightarrow$ Isosceles triangle

Q=5 Do your self.

Q=6 Find the value of x in each of the following:

(a) figure on book

Solution Here $\angle x = 90^\circ$

(c) figure on book

Solution $x + 90^\circ + 40^\circ = 180^\circ$

$$x + 130^\circ = 180^\circ$$

$$x = 180^\circ - 130^\circ$$

$$x = 50^\circ$$

(b) figure on book

Solution $x + 2x + 90^\circ = 180^\circ$

$$3x = 180^\circ - 90^\circ$$

$$3x = 90^\circ$$

$$3x = 90^\circ$$

$$x = \frac{90^\circ}{3}$$

$$x = 30^\circ$$

$$2 \times x = 2 \times 30 = 60^\circ$$

Q=7 Two angles of a Triangle are 45° and 25° . Find the measure of the third angle and also write the type of the angle (acute, obtuse or right)

Solution

Let the third angle be x

$$x + 45^\circ + 25^\circ = 180^\circ$$

$$x + 70 = 180^\circ$$

$$x = 180^\circ - 70^\circ$$

$$x = 110^\circ \text{ (obtuse angle)}$$

Q=8 In a right angled Triangle ABC, AB is $\perp$ to BC. and $\angle C = 50^\circ$. Find the measure of the third angle.

Solution

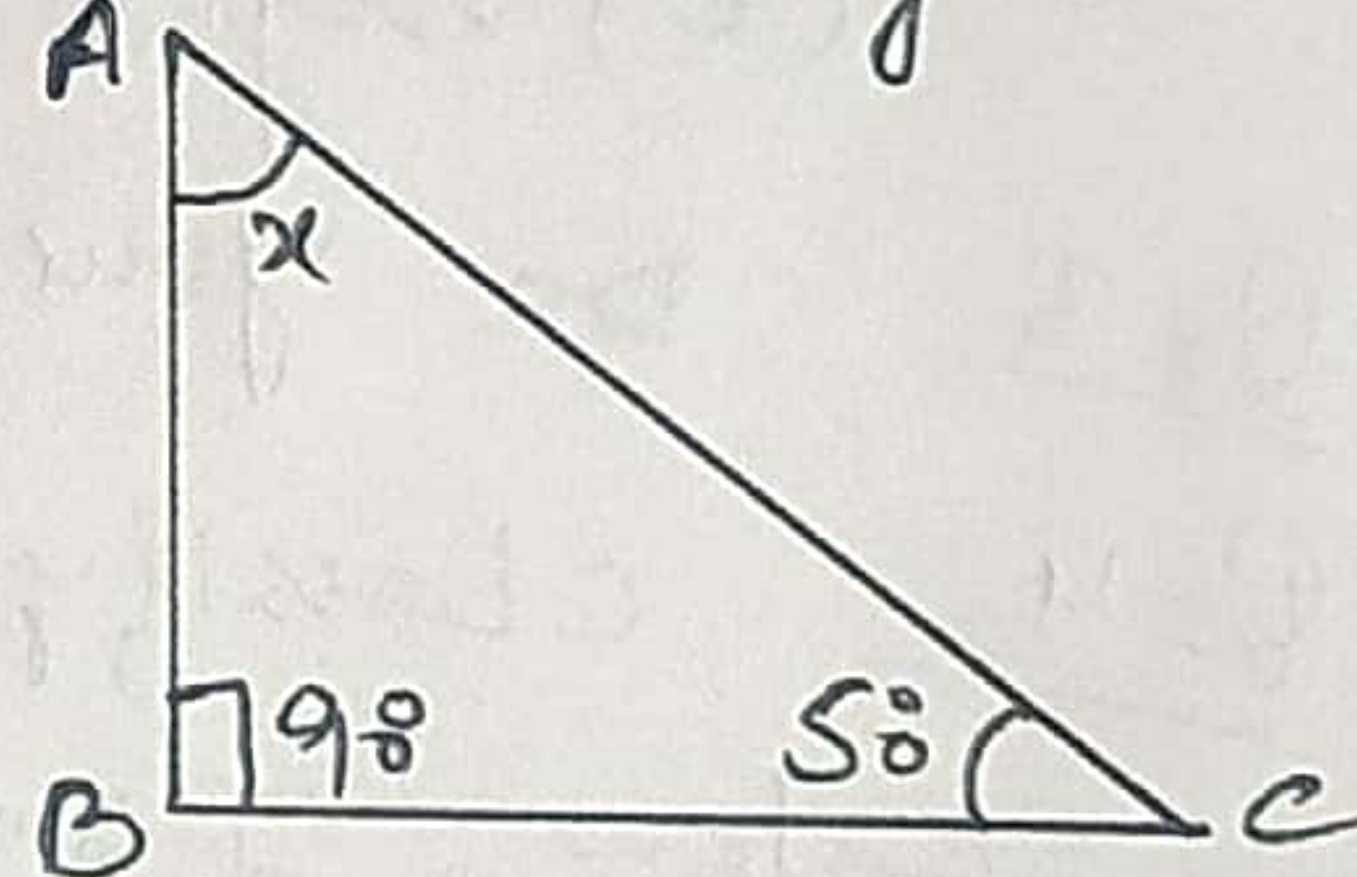
$$\angle A + \angle B + \angle C = 180^\circ$$

$$x + 90^\circ + 50^\circ = 180^\circ$$

$$x + 140^\circ = 180^\circ$$

$$x = 180^\circ - 140^\circ$$

$$x = 40^\circ$$



Q=9 Do your self.

[NOTE:- PRACTICE SECTION $\rightarrow$ CHAPTER 3 $\rightarrow$ (HCF & LCM)

CHAPTER 4 $\rightarrow$ (Natural Numbers & Whole Numbers) AND

CHAPTER 12 $\rightarrow$ (UNDERSTANDING ELEMENTARY SHAPES) (Do your self)

(ON BOOK)

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